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A collage of four images related to computer hardware. The top-left image shows a close-up of a computer fan. The top-right image shows a keyboard. The bottom-left image shows a mouse. The bottom-right image shows a computer motherboard with various components like RAM, capacitors, and a CPU socket.



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Disassembling the NC



I recently assembled my first network computer. And believe me, it was tricky! I had to pull this tale, push this side — then the whole thing kind of collapsed, and I had to try it again.

Alright, no trouble at all. I was just a hardware life-sized model of the JavaStation that Sun provided so I wouldn't forget the physical attributes of the new system. (It's a small, but stylish purple and gray affair — see page 44 for a photo.)

Almost every traditional computer manufacturer has been evaluating the concept of this new computing "paradigm." (as Sun likes to call it.) Please see "New Wave Of NCs..." on page 44 by Jeff Evans. (This issue we welcome Jeff as Canadian Computer Wholesaler's new Toronto Editor.)

Mapping It Out

For a map of the current scenario, consider: On one side are the big NC-advocates Sun, IBM, Oracle — to name a few of the big boys. With a stated goal to reduce corporate IT costs by centralizing computing on the server, allowing only a very "thin" client to sit at the desktop level, these vendors are paving the way for lower-cost, terminal-like devices, where applications and data are downloaded on-the-fly (I've experts to play a big role here). While the CPU will provide desktop processing and allow for an attractive GUI — users won't lose the flexibility to customize their desktops, load on software without permission of the network administrators, or even download data off the network. "Hokey!" — say the advocates, as the more "centralized" view of the world will be where the real cost-savings lie, as software, management, upgrades, and administration can all happen centrally.

Of course — as Bill Gates is quick to point out — this will mean higher-cost servers, better databases, plus more powerful management software and networking, which surely coincides with the aims of expertise of the major NC advocates.

Yet, Gates hasn't laughed off their efforts. Rather, Microsoft has attempted a geo-captive strike through the joint announcement with Intel of the NetPC. Instead of changing basic architectures, the NetPC is a stripped-down, standardized version of today's traditional personal computer, with an internal hard disk, for caching

only and no on-line expansion slots. The basic message is: we can reduce the cost of corporate computing without sacrificing away the baby. Traditional computing can be adapted to offer more or less network-optimized applications, and when a thin client is appropriate (for "heads-down" data inputs, or to people who don't need the full functionality of PC's), then invest in the most basic PC model — the NetPC.

So who's got it right? A popular answer is "Well, both." Many corporations currently running terminal environments will closely examine NC's — to give their users more desktop processing power and attractive interfaces. Moreover, those moving to automate new workers, may indeed consider NC's — particularly for single-task workers or employees with only moderate computing demands. And while many companies may choose to sit back and evaluate the NC's potential and progress over the next while, those more frustrated with the inconsistent and management challenges associated with today's networks — will likely be among the first to test out NC scenarios.

The Home Front

Now what about the home user?

Rather than expecting a lot on the Internet appliance front from traditional PC vendors — look to players in other industries. Telephone manufacturers (including Norad) are developing systems that will expand the telephone's capability to download text-based information (even Web content or E-mail) onto phone screens. In certain geographical areas, people at home are already sitting down at their telephones to check and reply to their E-mail.

And no doubt game makers currently equipped with video game machines, would be interested in an upgrade to allow game players to surf the Net. (Development is already well underway on that front.)

A Plea For Standards

Whichever way the wind blows — the most important issue to consider will be standards. All industry players find better take care to ensure their offerings (most and are truly compatible with the others in the marketplace. The last thing users want is a return to the proprietary computing "paradigm" of the early '80s.

Have a wonderful holiday season!

Garry Goodwin
Editor

Canadian Computer Wholesaler

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Morphing in two Directions



Two big trends appear to be shaping up in the computer industry, if the evidence from Canada is to be believed.

The computer as we know it is continuing to morph in two directions. Mobile handheld computers and Web-based Java PCs. Both of these new trends imply a simplification of what a computer does and the related maintenance and training requirements. In one direction we are seeing new simpler portable computers represented by the new CE Windows handheld units. In the other direction is the emergence of products designed to simplify the basic PC into a Web-dependent E-mail and information gathering device.

This direction is represented by Sun's new JavaStation and the NetPC.

You will hear volumes about the technology of these two new directions. No doubt necessary, we'll be launched just to explain them. My caution is who is going to sell these units.¹

Personal Digital Assistance™

Someone should go out and trademark the word, Personal Digital Assistance as a great name for a new specialization in handheld computers. I would do it, but I am not likely to go into retailing any time soon.

We have already seen that with basic electronic organizers and low-end PDAs, manufacturers can make them simple enough to put in a retail box and sell them in electronics boutiques. When the complexity goes down, the number of outlets that can sell these units goes way up. They become like microwaves — a day's training and an orange can sell them.

If the new Windows CE platform is too easy then the units will likely become commoditized. It will be difficult for close retailers to jump into this game. This is an area where larger manufacturers will likely dominate and chain stores or volume retailers will predominate.

It is just unclear how well this market will do. The Apple Newton has had slow sales, due to high price and scarce marketing. Our system I heard suggested that the company had only sold about 100,000 units this year — not exactly a mass-market phenomenon.

I have seen some Newton-specific stores in major Canadian and US cities, but they always seem deserted when I visit them. The Newton unit is very hard to install (at least even Macintosh definitely not Windows). Software packages had to be specifically written to the Newton operating system.

Windows CE will no doubt benefit by the success of Windows in general. If adapting the software to run on the CE platform is relatively easy,

Microsoft could have another winner on its hands. One thing that the Newton experience suggests is that if the area grows, and consumers demand custom solutions, then a market will emerge for resellers to supply these options (and someone will make a million bucks with the soon named Personal Digital Assistant™).

Web PC

PCs have been hampered by business constraints for lower productivity in many businesses, despite billions having been spent on workstation computers. Numerous surveys have pointed out that the cost of the average PC is far exceeded by the training, configuration and software support cost of the unit over three to five years.

The promise of the Web PC, or the Java-based PC is that the consumer or employee would have one of these units placed on their desk and then never have to deal with another configuration hassle. The Web, by its nature, promises a much simpler interface to information gathering and distribution. The unit would be reduced to a monitor, keyboard, mouse, a CPU and some RAM — no disk drives to fiddle and configure. The promise is that these units would sell for \$500 and up, perhaps even lower if the consumers can use their existing TV sets as monitors.

New retail channels will no doubt emerge to sell these units. I met a cheerful fellow on the plane recently who had come back from a multi-level marketing seminar where a telephone-based Web PC was being touted as the next road to riches. To the home, these units will likely be sold on a lease by cable companies.

In the past few weeks, Rogers Wire has been announced in more Canadian markets. This service was able to provide high speed Internet access, and looks very competitive with the telephone companies ISDN services. Selling a box the Web TV would be a natural extension for this company. Traditional computer reseller channels will not be blocked out of these sales.

Corporations will still look to resellers to provide these units, but clearly new channels will pose competition.

Challenge and Opportunity for Resellers

The likelihood of many computer resellers is going to be challenged if either of these two new computer evolutions take hold on a big way. No doubt the traditional computer will not disappear but many of the potential customers for computers will be looking at these options as alternatives.

As always, resellers who adapt and grow will flourish. **DAW**

Doug Alder
Publisher

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Netscape, Oracle sign deal

Netscape Communications Corp. and Oracle Corp. have announced two agreements in which they will integrate, market and distribute each other's products.

Oracle will bundle Netscape Navigator with the NC software operating environment produced by Oracle's subsidiary — Network Computer Inc. Oracle says it will not offer any other third-party browsers bundled with its Intel-Based PCs.

In a separate agreement, Oracle integrates its workgroup database servers with the bundled web Netscape Commercial Applications, including Netscape Merchant System, Netscape Publishing System and Netscape Community System. Moreover, Netscape won't offer non-Oracle database software with Netscape Commercial Applications. Netscape will also deliver Oracle Universal Server-based versions of its Netscape LiveWire Pro and Netscape SiteSpace server family to market. ♦

Meridian Data signs DynaTek

DynaTek Automation Systems Inc. in North York, Ont., has signed an agreement with Meridian Data Inc. of Santa Valley, Calif., to distribute Meridian's full line of CD-ROM network software and servers across Canada.

DynaTek is a disk filter and multimedia of SCSI mini-storage sub-systems, C D - R O M pickers and RAID storage products.

DynaTek will distribute Meridian's full line of products including CD Net Software for configuring and managing shared CD-ROMs for all network platforms, CD Net CD-ROM Network Servers and Subsystems, and CD NetRecord CD Recordable Network Software.

The relationship will also include an ongoing, cooperative channel marketing campaign including advertising, sales and rebate promotions, and support initiatives. ♦



Toshiba notebook line adds full multimedia capability

Last month Toshiba of Canada, Information Systems Group (ISG) rolled out five new models of notebooks, all of which offer full Multimedia PC (MPC) capability, across a wide range of configurations and price points.

According to Robert Grossman, vice-president and general manager of Toshiba of Canada, Inc., "With the debut of the Toshiba Satellite 200CDS, full multimedia capabilities are now standard across all new Toshiba of Canada notebooks. Toshiba is first in bringing the features that were previously reserved for the higher and right down to the entry level, so that more of our customers access the features they need for today's resources intensive mobile computing." The new models include the Satellite 200CDS and Satellite Pro 470 series, aimed at the price sensitive executive and small business user, the Portege 660 GDI ultra-portable (\$4,299), for the premium, ultra mobile desktop replacement notebook user, and the Tecra 510CDE also for the high end desktop replacement market. Not all prices on the new models were finalized at the time of launch.

All the new models are based on the Pentium processor, with clock speeds ranging from 100MHz (Satellite 200CDS), to 120MHz (Satellite Pro 470), 133MHz (Tecra 510CDE) and 150MHz (Portege 660CDE). All models feature built-in CD-ROM drives

MAX for the Satellite 200CDS, 10X for the Pro470, large, high resolution color screens, stereo sound, large, fast hard drives (up to 12.1-inches with 680 by 600 resolution with 16.7 million colors), 16MB EDO RAM (expandable up to 144MB on the Tecra 510CDE), and an array of additional features particularly on the higher end models, including Leftwin font features, sophisticated power management features, digital video acceleration, and built-in modems.



Toshiba continues to be the leading notebook vendor in Canada, with about 27 per cent market share.

The company recently announced a worldwide, comprehensive warranty program in association with Unisys, whose mobile computer systems will be offered an international warranty full-line network. Problems that can't be resolved over the phone will have service on-site by Unisys, with a no-on-site-to-the customer turnaround of between three and five days.

As well, after a good reception to the new line of Toshiba consumer PCs in the U.S., Toshiba Canada may release the second generation of Toshiba consumer desktops in Canada in mid-1997, according to a Toshiba source. The new line can be expected to offer some spectacular digital video capabilities, according to the source. ♦

IBM, Intel ally on desktop management with agreement

(NB) — Intel Corp. will incorporate IBM's Wake On LAN technology in its Pentium Ethernet adapters and LANDesk Client Manager software, and IBM in turn will use those products in desktop computers based on Intel's Pentium and Pentium Pro microprocessors, as part of the Advanced Manageability Alliance the two companies have announced.

IBM computers incorporating the Intel products with Wake On LAN will be available in the first quarter of 1997, company officials said. According to IBM spokesman Bill Hughes, the alliance also gives Intel the right to sell the products to others.

The Advanced Manageability Alliance is strictly an agreement between IBM and Intel, and isn't intended as the beginning of a larger industry group or driving other vendors, Hughes said. He also denied there is any connection between this announcement and recent maneuvering — that has included IBM, Intel, and other companies such as Sun Microsystems Inc. and Microsoft Corp. — over new "network computer" or Internet appliance designs that might compete with each other PCs.

Intel's Fast Ethernet network technology and IBM's Wake On LAN technology — which allows a PC to be turned on by remote control over a local-area network — are the key elements of the agreement today, Hughes said, but as time other products may be exchanged as well. "This is not just a one-off technology agreement," he said. "It's going on for a while."

The two vendors claimed their goal is to make it easier for their customers to manage desktop computers, install and upgrade software, deal with support issues, and reduce costs. They said they are working on further technology that will allow corporate PCs to be controlled by IBM's LAN Desk Client Manager and Intel's LANDesk Configuration Manager. ♦



Our 17" monitors have won *Eye Magazine's* Best Monitor Overall for Image Quality award, been praised by *Windows Magazine* ("You'll like what you see") and highly recommended by *PC Buyer's Guide* and *Reader's Digest*.



Ash and the market for "multimedia upgrade kits" — bundles containing a CD-ROM drive, a sound card, speakers and a selection of software, have declined considerably in the last year.

He said: "People just want the drive by itself, either to put a CD-ROM drive in a PC that doesn't have one, or to upgrade from a 2X drive to 8X or 10X. They already have a sound card and speakers, and they increasingly don't want to buy a bundle of CD-ROM titles, only a couple of which they'd ever want to use."

Brand Awareness Isn't Big

According to Ash, most retail customers regard CD-ROM drives as a commodity, and have relatively little of any brand awareness. Margins are so low, that selling CD-ROM chips has become as much a service to stores and help customers, as a major profit center.

The multi-changer CD-ROM drives, introduced by vendors such as NEC and Pioneer, have had only modest success compared to the popularity of multi-disk CD audio players in the consumer electronics market.

It appears that most PC owners would rather devote the extra few hundred dollars to an incremental cost for a multi-disk CD-ROM player or to other, higher performance purchases, such as main RAM, graphics card, hard drive capacity, or a bigger monitor.

Aside from resistance to the extra cost of a multi-changer CD-ROM drive, the ergonomics of computer use seems to have conspired against the success of the product.

A PC user is never more than a few inches away from the CD-ROM drive. Changing disks is a minor chore. ACD audio user, however, sitting at a piano or a party, or attempting a reduction on the couch across the room from the sound system, finds getting up and manually changing disks much more of a nuisance, hence the greater acceptance of that customer base to the multi-disk product.

DVD — Mountain, or Molehill?

Looking over the entire CD-ROM hardware and software market is the unanswered question of Digital Video Disk (DVD) technology. If the copyright laws of software content publishers can indeed be aligned (perhaps by some sophisticated encryption techniques), DVD might become a big factor in the market by the end of 1997.

DVD drives have more than 4GB of storage capacity, compared to 660B for a regular CD-ROM. This allows full length feature films in extremely high quality digital video format to reside on a single disk. The DVD drives are supposed to be backwards compatible (will run the current 800MB capacity CD-ROM disks), but DVD format disks can't be read by current, non-DVD drives.

This means the spectre of consumer resistance to a new, incompatible format.

On the one hand, if consumers decide they want DVD, then vendors will benefit from increased replacement sales as well as new sales, with higher prices and profit margins. On the other hand,

through, there is the possibility of retailers getting stuck

with unsold old-model CD-ROMs

if DVD vendors can move quickly than expected, or with

unsold stocks of DVD drives if the

new technology flops, or, even if, as

Bill Gates feared not, if it just takes longer than expected

for new technology to catch on.

As well, retailers may find that the problem of too many multi-

media titles, too little shelf space will get even more acute if new

DVD-only titles pose for space with the older format.

Major PC manufacturers are preparing to move into the

DVD-CD-ROM market, as they plan and introduction of consumer PC models with DVD drives as a standard feature.

Toshiba, for example, which has entered the US retail market with a line of premium-priced (and initially

very well received) desktop home PCs, plans that it intends to introduce the next generation of its home desktop PC line into Canada in mid-1997, complete with

DVD drives as a standard feature.

And Eventually, DVD For Notebooks

Also according to Toshiba, which has recently unveiled a full

line of notebook PCs with built-in CD-ROMs as a

standard component in business notebooks, DVD for mobile

computer users is likely by 12-18 months away, but it

is likely to come eventually.

The CD-ROM has gone from a

simple, raw technology to a more-largely heavily

discounted commodity in about eight years, but

if anything, in rate of change, in terms of markets, prices,

and technology, seems destined to accelerate in 1997

providing a delirious, fast moving target for the retailer to catch.

"Looking over the entire CD-ROM hardware and software market is the unanswered question of Digital Video Disk (DVD) technology."



Jeff Emsw is Toronto Editor for Canadian Computer Wholesaler. He can be reached at jeff@comp.ca

CD-ROMs: Can We Keep Up With The Changes?

Oversupply, DVD Advent — Made 1996 Tumultuous And Just Wait 'Til You See 1997!

by Jeff Evans

Bill Gates, when visiting Taiwan two years ago, and when he saw the potential of CD-ROM technology — a cheap, huge capacity storage and publishing medium for computer software — he figured that all computer users would immediately rush out and add CD-ROM drives to their computers. "It didn't happen nearly as quickly as I thought it would," he commented. "But it did happen eventually."

In 1995, worldwide sales of CD-ROM drives expanded massively from the year before, reaching as much as 35 million units.

However, in a marketplace of ever stronger sales than that, manufacturers made millions more CD-ROM drives than they could sell. Wholesalers in Singapore and elsewhere in the Pacific Rim were packed to the ceiling with unsold product.

What was worse, as new, faster models of eight-speed and 10-speed CD-ROM drives began to come off of assembly lines, emergency measures had to be taken to sell older, slower four- and six-speed drives while they were still salable. The result was a price-cutting frenzy, which was great for consumers, but terrible for manufacturers.

The History

Philips, the inventor of the original Compact Disk technology and attracted a lot of support from computer vendors for the CD-ROM readers in

early as the late 1980s. The first CD readers for computers were massive external units (usually SCSI models), which had a snail-like data transfer rate of about 150Kbps (so-called single speed), and cost as much as \$1,000, for the early Apple Mac version.

Quickly, however, costs declined as production increased, and data transfer rates increased in increments of 150Kbps, to the point where the current state-of-the-art 10-speed (100K) CD-ROM drive reads data at rates up to 1.5Mbps, a respectable fraction of a hard drive's data transfer speed.

They All Got In On The Game

A host of manufacturers jumped into the CD-ROM drive market, including Toshiba, Pioneer, Philips, Acer, Pioneer, Creative Labs, TEAC, Goldstar, Panasonic, Pioneer, Hitachi and Sony.

NBC, in particular, established a reputation for quality with its SCSI interface cards and CD-ROM drives, that made it a major supplier of premium priced drives. The price collapse of 1995, however, has transformed the market dramatically. CD-ROMs have become a low-price, low-margin commodity. CD drives were selling at a low leader retail price of US\$59 at the Comdex/Chicago show.

Technology leader NEC, battered by the price cutting and by the increase in the cost of the Japanese yen, has found the CD-ROM drive market a very hostile environment, and has cut back its participation in it, at least for the time being.

According to Dave Ash, owner of Multimedia Connection, a Toronto-based CD-ROM software

store, "Almost every new home PC (more than 90 per cent) being sold today has a CD-ROM drive pre-installed."

"Aside from resistance to the extra cost of a multi-changer CD-ROM drive, the ergonomics of computer use seems to have conspired against the success of that product."



Ash used the market for 'multimedia upgrade kits' — bundles containing a CD-ROM drive, a sound card, speakers and a selection of software, have declined considerably in the last year.

He said: "People just want the drive by itself, either to put a CD-ROM drive in a PC that doesn't have one, or to upgrade from a 2X drive to 4X or 16X. They already have a sound card and speakers, and they increasingly don't want to buy a bundle of CD-ROM titles, only a couple of which they'd ever want to use."

Brand Awareness Isn't Big

According to Ash, most retail customers regard CD-ROM drives as a commodity, and have relatively little if any brand awareness. Margins are so low, that selling CD-ROM drives has become as much a means to attract and keep customers, as a major profit centre.

The multi-changer CD-ROM drives, introduced by vendors such as NEC and Panasonic, have had only modest success, compared to the popularity of multibank CD audio players in the consumer electronics market.

It appears that most PC owners would rather devote the extra few hundred dollars in incremental cost for a multi-disk CD-ROM player, or other, higher performance purchases, such as extra RAM, graphics card, hard drive capacity, or a bigger monitor.

Away from resistance to the extra cost of a multi-changer CD-ROM drive, the ergonomics of computer use seems to have conspired against the success of that product.

A PC user is never more than a few inches away from the CD-ROM drive. Changing disks is a minor chore. A CD is in use, however, juggling with guests at a party, or attempting a solution on the couch across the room from the second system, finds juggling up and manually changing disks much more of a nuisance, hence the greater acceptance of that customer base to the multi-disk product.

DVD — Mountain, or Molehill?

Looming over the entire CD-ROM hardware and software market is the unanswered question of Digital Video Disk (DVD) technology. If the copyright fears of software content publishers are indeed to be allayed (perhaps by some sophisticated encryption techniques), DVD might become a big factor in the market by the end of 1997.

DVD drives have more than 4GB in storage capacity, compared to 45GB for a regular CD-ROMs. This allows full length feature films at extremely high quality digital video format to reside on a single disk. The DVD drives are supposed to be backward-compatible (will run the current 650MB capacity CD-ROM disks), but DVD format disks can't be read by current, non-DVD drives.

This raises the spectre of consumer resistance to a new, incompatible format.

On the one hand, if consumers double their want DVD, then dealers will benefit from increased replacement sales as well as new sales, with higher prices and profit margins. On the other hand, though, there is the possibility of retailers getting stuck with unsold old-model CD-ROMs if DVD catches on more quickly than expected, or with unsold stocks of DVD drives if the new technology flops, or, even if, as BCI Games found out, if it just takes longer than expected for new technology to catch on.

As well, retailers may find that the problem of "too many multimedia titles, too little shelf space" will get even more acute if new DVD-only titles jockey for space with the older format.

Major PC manufacturers are preparing to move into the DVD CD-ROM market, as they plan test introductions of consumer PC models with DVD drives as a standard feature.

Toshiba, for example, which has entered the U.S. retail market with a line of premium-priced (and initially very well received) desktop home PCs, hints that it intends to introduce the next generation of its home desktop PC line into Canada in mid-1997, complete with DVD drives as a standard feature.

And Eventually, DVD For Notebooks

Also according to Toshiba, which has recently unveiled a full line of notebook PCs with built-in CD-ROMs as a standard component in business notebooks, DVD for mobile computer users is likely 12-18 months away, but it is likely to come eventually.

The CD-ROM has gone from an exotic, new technology to a mainstream, heavily discounted commodity in about eight years, but if anything, its rate of change in terms of markets, prices and technology seems destined to accelerate in 1997, providing a difficult, fast moving target for the reseller to catch. **END**

Jeff Evans is Toronto Editor for Canadian Computer Wholesaler. He can be reached at jeff@n.psa.ca.



"Looming over the entire CD-ROM hardware and software market is the unanswered question of Digital Video Disk (DVD) technology."





Merisel signs with Techmar Technologies

Merisel Canada Inc. has announced the signing of a distribution agreement with Techmar Technologies.

Techmar was named as a result of the acquisition of the assets of Ronan Inc. of Longview Co. by Legacy Storage Systems International Inc. of Markham, Ont.

Techmar's SmartArray series of RAID products are now in the distribution channel. SmartArray features Ultra Wide SCSI 3, 300 and 900 hard disks, PCI disk array controllers and a maximum throughput capacity of up to 80MB/sec.

According to Merisel, SmartArray is designed for LANs and enterprise networks and is compatible with major operating systems, such as Novell NetWare, OS/2 and Windows NT.

Ingram Micro launches Internet catalog

Ingram Micro Inc. (Canada) has launched an Internet-based electronic catalog, providing readers with password-protected, real time access to information on more than 26,000 products from 550 manufacturers.

Readers can visit Ingram Micro's Web site at <http://www.ingram.com>, to look up price and product availability. A full-text search capability allows users to search by price, availability, name, category or key word.

Ingram Micro's In-Depth Manufacturer Information Library features sales and marketing materials, technical information and publications, training materials and channel support. Using Adobe's Acrobat software and Portable Document Format (.pdf), the company says the library provides a storehouse of manufacturer information that is indexed and accessible via print, store or E-mail stored documents.

Prepare for tax season — with The Canadian Tax Tutor

Calgary-based CanTax and Winnipeg's The Jacks Institute have launched a software package to combine an income tax training course with planning software — in advance of the tax season.

According to CanTax, The Canadian Tax Tutor is designed to help Canadians get organized to prepare their annual income tax return. It features hands-on instruction by tax author Evelyn Jacks and includes 1996 tax training software by CanTax.

When consumers buy and register their software, they'll receive a final filing version of the CanTax 97 software when it is available next February — just in time to file 1996 income tax returns.

The Canadian Tax Tutor can handle "what if" scenarios, such as charitable donation and RRSP contribution levels, and print the results on a draft tax return. Users can even a Certificate of



Participation from The Jacks Institute, for completing the course.

The Canadian Tax Tutor has a suggested retail price of \$39.95.

Canadians tackle 'Net content' concerns



As part of the StarSafe Challenge initiative at CANADIAN schools, NetNanny's Net Shepherd Inc. is providing video-assisted technology to demonstrate the filtering process to teachers (Sharon Loh) and student (Tom) Henry at St. Anthony High School in Burlington, Ont.

(NR) — Two Canadian companies and a number of Canadian educators are working on their own ways on the problem of keeping children away from inappropriate Internet content.

Calgary-based Net Shepherd Inc. has announced a content-rating program called the StarSafe Challenge in co-operation with the federal government's SchoolNet, while Vancouver-based Net Nanny Ltd. has just introduced a new release of its multimedia remote-control software.

Kevin MacDonald, a spokesperson for Net Shepherd, said his company launched the StarSafe Challenge to have teachers, librarians and other qualified educators rate the roughly 57 million documents available on the World Wide Web. Through a collaborative rating system using Net Shepherd's DAX Blockad software, participants will assign ratings ranging from general through objectionable to documents, and also by quality using a five-star system. These ratings will be placed in a database for future reference.

SchoolNet, the network the Canadian government set up to link Canadian schools, is supporting the project, and Net Shepherd issued a challenge to schools in the United States to participate as well.

MacDonald said his company plans a major promotion of the project in the U.S. later this year.

Las Vegas marketing coordinator at Net Nanny said schools are showing a growing interest in his company's software, which allows parents or teachers to limit access to Web sites. This is partly because the issue is getting a lot of public attention lately and partly because schools are using the Internet more and more, he said.

Net Nanny has just released Version 3.0 of the software. One new feature is the option of creating a "Can Go" list, so that only listed sites are accessible, as an alternative to the earlier version's "Can't Go" approach, which required updating to keep up with the discovery of new sites that needed blocking.

Blocking web browsers are also showing interest in Net Nanny because it allows them to control time-wasting use of the Internet at work without blocking employees' access altogether.

Net Nanny has a suggested retail price of \$39.95.

Canadian ISP Group announces code of conduct

(NR) — The Canadian Association of Internet Providers (CAIP) has created a voluntary code of conduct that it hopes its

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members and other Internet service providers (ISPs) will follow.

The code pledges compliance with all applicable laws, and in particular commits ISPs not to knowingly host illegal materials on their systems. It also promises respect and protection for users' privacy, and a commitment to public education about Internet issues and technology.

Marge Langford, general counsel for Star Internet Inc., is Ottawa and chair of the CAIP group that drew up the code of conduct, and there is no federal policing mechanism at the moment — but CAIP may at some point in the future make a commitment to comply with the code a condition of membership in the organization.

CAIP currently has about 40 members, or about 10 per cent of Canada's ISPs, Langford said.

Langford said the code's commitment not knowingly to host illegal material means ISPs will remove material that is illegal — such as child pornography — if it is brought to their attention. Clauses in the code also commit ISPs to make a reasonable effort to investigate legitimate complaints about content they host, and will notify the content provider or abuser of the complaint before taking action.

ISPs can control World Wide Web content posted on their servers, and can stop carrying specific Usenet news groups, which are usually made available to an ISP's subscriber by loading them onto the ISP's own server.

An ISP cannot do anything about its subscribers obtaining illegal material from sources elsewhere on the Internet, Langford added.

On the privacy front, the code of ethics states that ISPs will provide private information to law enforcement authorities only as required by law.

Rogers puts Canadian art on the Web

(N6) — Rogers Communications Inc. has launched a Web site called Artsource@Rogers, which links to Canadian art galleries and will grow in future to include more. The site uses Star Microsystems Inc.'s Java language to provide some unusual features.

The site, at <http://www.artsource.rogers.com>, is not a money-making venture, according to Rogers spokesman Martin Jan. It grew out of Rogers' sponsorship of a Toronto art exhibition last year. Jan said that when Rogers sponsored the show at Toronto's PowerPlant contemporary gallery last year, the company arranged to display images of the artwork in

the show on its Web site. Then a company employee got the idea of expanding this concept to other galleries.

To date, the Power Plant, the Vancouver Art Gallery, the Edmonton Art Gallery and Glenbow Museum, the Art Gallery of Ontario, and the Art Gallery of Hamilton, Ontario are live on Artsource. The Winnipeg Art Gallery, the London Regional Arts & Historical Museums in London, Ont., the National Gallery of Canada in Ottawa, the Musée d'art contemporain de Montréal, and the Art Gallery of Nova Scotia in Halifax are expected to be live by December.

Using Java, Rogers has created a site where visitors can take a "virtual tour" of the galleries, seeing images of the rooms in the gallery and then clicking on individual art works to zoom in on detailed images. A Java-enabled Web browser is needed to take advantage of this.

Jan said the site is extensive, with about 1,500 pages. Some of the participating galleries already had a presence on the Web, she said, but "none of them had anything like what we've put together." Rogers hopes that more art galleries will join the project in future, she said. **R660**

Contact: The Editor

LETTERS

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Christmas 1996 — is it time for some cheer?

Last year's slump in retail sales, due to the Windows 95 launch, won't be repeated this year, experts say.



By Gary Davies

More Canadian children probably missed it, but last year the computer industry actually experienced two Christmases. The first occurred in August when Microsoft Corp. celebrated its worldwide launch of Windows 95. The second took place at the usual time of year and was actually much less hollyhosed.

Why? Because most vendors, distributors and retailers, agitated by the hype surrounding the Windows 95 launch, began to dial off right around the time Christmas sales start to ramp up. The result was an overexposed consumer and a lot of upset retailers.

"Last Christmas was horrible," said Larry Wawer, who is chairman and CEO of Beavertop Electronics Entertainment. "The combination of the (Quebec) referendum along with the Windows 95 launch, really hurt sales."

You would be hard pressed to find anyone who would disagree with Wawer's assessment of the '95 holiday season. The huge marketing campaign Microsoft threw into the Windows 95 launch really slaved traditional holiday sales and left even the most seasoned analysts stumped for an explanation.

"I don't know what it was," said Ian Hayes, a senior analyst with marketing research firm AC Nielsen. "Things were progressing well during the fall months and then they really flattened out over Christmas."

The likelihood of such a recurrence this Christmas is remote, Hayes says, if only because a launch the size of Windows 95 is not in the cards. "Sales (this year) have been really weak through to the end of August, which is the complete opposite from what happened last year," Hayes points out. "All indications are the September to December cycle will be much stronger in '96."

AC Nielsen's figures show that shipments of desktops and notebooks are extremely high heading into the holidays. "Retailers are just leeching these figures to indicate that retailers are extremely excited about the coming Christmas season," Hayes says.

And what will be the big sellers this season? Retailers across the country are in agreement that anything with the word "multimedia" attached to it will sell very well. "The whole concept of multimedia has taken on a new meaning this year," said Ed Galsing, assistant manager of Campus

new products on the market already. And as far as price comparison goes, you can get a lot more for your money this year than you could for the same price last year."

David says the driving force behind sales this Christmas will be the consumer's interest in the Internet.

"The Internet will definitely sell well and it has become a standard offering in most of our products," says Andre Tanguay, director of product marketing and operations for IBM Canada Ltd.

"There has been a real increase in sales because of (the Internet)," said Jason Wilkes, manager of the computer department at the Future Shop in Calgary. "It is becoming something that kids need for school, and this year parents can definitely get more bang for your buck."

Tanguay, however, has a differing opinion about the Christmas outlook. "The industry growth in the last half of '95 was quite healthy—somewhere around 12 to 13 per cent," Tanguay said. "We've only seen about three to four per cent growth this year and it will likely only pick up to eight or nine per cent growth in the last half of this year."

However, IBM is banking on significant sales of its new S-Series line of Aptiva to boost Christmas sales.

And if Santa doesn't come through with a prosperous Christmas—well, there's always Windows 97. ☺

Gary Davies is a journalist based in Calgary, specializing in high technology.



"You can get a lot more for your money this year than you could for the same price last year."

— Sid Ozial

Computers at the University of British Columbia in Vancouver. "Most of the requests we get are for 3-D cards, upgrades, games, MPEG movies, 33.6 modems—anything the individual has heard of or read about in computer magazines."

Wawer says there's no question the industry is healthier at present than just years ago—the real question is the financial health of the consumer. "Just how much disposable income is left there?" Wawer asks. "If there is a fair bit of disposable income, the major concern of vendors right now is that there will not be enough supply to meet demand."

Sid Ozial is another who feels optimistic about the coming season. The consumer marketing manager for Compaq Canada Inc. says that, with interest rates at a 60-year low, all indications are "the economy is picking up." There is a good selection already out there. All the vendors have their



Dr. Solomon releases anti-virus toolkit

(NR) — Dr. Solomon's, the anti-virus specialist company, has unveiled the Management Edition of its anti-virus toolkit. According to officials with the company at the Network-Intercept show in London, England, where the package was launched, the software is designed to assist an IT department in the management of anti-virus software on networks.

The first release of the software will cater for Windows NT-based systems, Windows for Workgroups systems, Windows 95, and Windows NT systems. Plans call for subsequent releases to provide similar facilities for Novell NetWare-based networks.

"The key purpose of the Management Edition is to coordinate and control the protection of the entire network by treating it as a single entity," said Mike Hill, the company's director of product marketing. "This is particularly helpful for companies with increasing numbers of workstations and servers."

According to Hill, "Whether installing, updating, configuring, scheduling or alerting, users no longer have to think about the individual server or workstation unless they want to," he said.

The software splits neatly into four main modules: scheduler, task scheduler response manager, and monitoring agent. All of these facilities are set up and configured by the management console, which distributed optional elements of the Management Edition and Anti-Virus Toolkit to selected machines.

According to officials with the company, the package also makes versions of software installed on individual machines, and will update them when necessary, configuring just about everything. "Our clients are frequently asking us to work with their existing management tools," Hill said, adding that the Management Edition will generate SNMP (Simple Network Management Protocol) traps to address this issue.

The Management Edition is claimed to run "transparently" across Internetwork Packet Exchange (IPX), Transmission Control Protocol/Internet Protocol (TCP/IP) and NetWare-based networks, or any combination of all three.

The package is expected to ship on both sides of the Atlantic in the first quarter of 1997, with a price of around the US\$650 mark. Dr. Solomon's Web site is at <http://www.dr-solomon.com>. ♦

Saagata expands drive line

Seagate Technology Inc. has expanded its Modelist product line of 3.5-inch hard drives, with the 3.5GB Modelist 1340 and the 4.5GB Modelist 4340.

Both drives incorporate Seagate-manufactured heads, printed circuit boards and media. They incorporate a 4,500 rpm rotational speed, a 12-millisecond average seek time, an internal data transfer rate of 88MBps, and a 128K buffer for storage-hungry applications, says the company.

The products ship with Seagate's DriveWizard installation and performance software.

According to Seagate, the drives achieve a mean-time-between-failure rating of 30,000 hours and come with a three-year limited warranty.

Seagate is at (908) 438-6258. ♦

Symantec's PC Handyman tackles 20,000 computer problems

(NR) — Symantec Corp. says its new PC Handyman is designed to match Windows 95 users who are tired of being placed on hold for tech support or spending hours reading complicated manuals and books in hopes of solving a single problem.

Combining automated repairs, instructional video clips, and text-based instructions, the 350 program addresses more than 20,000 problems.

Symantec, well-known for diagnostic and problem-solving tools such as Norton Utilities, says Handyman is for the millions of Windows 95 users who do not have access to a corporate technological to solve everyday conflicts which occur with computers. "PC Handyman is like that good friend who understands computers as has all the right answers immediately," said George Hales, vice president and chief technology officer at Symantec.

In addition to providing solutions to more than 20,000 problems, Symantec says Handyman performs 16 regularly scheduled software and hardware checks, which includes looking for viruses, low disk space, low memory and disk errors.

Currently available at most software retail outlets, the new utility also includes Norton CrashGuard with Anti-Freeze. According to the company, the additional safety protects users from losing files as a result of application crashes and freezes. In some cases, CrashGuard can "jump in" when a crash or freeze is occurring, make necessary corrections and allow a user to continue working.

PC Handyman requires a Windows 95-based multimedia PC powered by a 486DX or faster microprocessor running at least 8MB of memory (12MB recommended) and

15MB of hard disk space.

Symantec Software Ltd. can be reached at (416) 366-0425. ♦

Take a peek at new Symantec products online

(NR) — Symantec Corp. has posted on the Internet a sneak preview version of WinFax PRO for Microsoft Windows NT for software.

According to Symantec, the new NT product has functionality similar to current WinFax PRO 7.1 for Windows 95, but includes a TeleWorks telephony option, and an Internet fax capability.

"When Windows NT 4.0 began shipping we announced that we were developing a version of WinFax PRO specifically for that platform," said Marc Cohen, general manager of Symantec's Communications Business Unit. "Since then, we have been getting many requests from people, especially in the corporate market, who want to test the software before it ships. Since there is no full-featured fax application available today that specifically supports NT, and because we feel confident that the software we have now is very stable, we have decided to post the preview of WinFax PRO for Windows NT, which supports both NT 3.51 and 4.0, on our Web site for anyone to download and evaluate."



which can be used to control both the projector and the source of a presentation, like a non-book computer, and a 24-hour replacement service that's free of charge for the first year, and for an additional charge for those years after.

Another "new" feature of the MT800 LCD projector, Andersen said, is something that's extremely

low-tech, relatively speaking: the shipping case. It is designed to be shipped via FedEx or other carriers, and can be checked as cargo on airline flights. The case and projector can also be carried onto airplanes for storage in overhead compartments or under a plane's seat. NEC's case is also very strong. "We can actually put [the projector] in the case and jump up and down on the case, and it never dents it," Andersen said. "We've already done that on several previous ones."

The MultiSync MT800 carries a suggested retail price of US\$9,999, and is available through NEC dealers.

NEC Technologies can be reached at (800) 795-3600. ♦

Lotus intros WebLocator, Domino Advanced Services

(NRI) — Lotus Development Corp. has unveiled Domino Advanced Services, a new service option for its Domino servers for Notes and the Web, plus Lotus WebLocator for Browsers, a new capability that will add the ability to cache, store, search and replicate server-based Web pages on Web browsers.

"The Web browser war is winding down," remarked Lotus President Jeffrey Papowe, speaking during a recent teleconference. "The next stage is all about Web servers." Papowe asserted.

Although Lotus "invented" workgroup collaboration with Lotus Notes, "new entrants" like Netscape and Microsoft are now talking about servers that will adopt this general approach, according to the Lotus chief.

Microsoft, for example, is now announcing on its Web page that it is "further into its groupware," Papowe pointed out. "And I haven't seen Microsoft claim to be number two in anything for a good long while," he added. But "groupware is not easy for beginners."

In contrast, groupware and collaboration

constitute a "panacea" diagnosis for Lotus, Papowe contended.

Lotus vice-president Tim Dempsey told the teleconference attendees that, to further its position in the groupware market, Lotus is also adding an optional set of services for fault-tolerance, reliability, usage and billing to the forthcoming Lotus Domino 4.5.

Features to come standard with Domino 4.5 will include a set of Web site creation and management tools called Domino Action (formerly they were called under Net Action), POP3 mail support, calendaring and scheduling, and the built-in Simple Message Transport Protocol (SMTP) Message Transport Agent (MTA), available in Domino 4.0 only as a separate option.

Lotus also unveiled a new pricing structure of US\$995 for a single-processor edition of Domino 4.5 and US\$2,995 for Domino 4.5 SMP (symmetric multi-processor). Domino Advanced Services option will be priced at US\$4,000 for either edition of Domino 4.5. Lotus WebLocator is slated for release in the first quarter of next year for US\$29, with beta downloads from the Lotus home page available by the end of 1998.

More information on Lotus products is available at <http://www.lotus.com>. ♦

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Visit <http://www.inventech.com> for more information. ♦

IBM releases VisualAge for Basic

(NRI) — IBM Corp. has refined VisualAge for Basic, also known as "Bas," a programming environment designed to

extend the ease of use of the Basic program using language into two new arenas for the enterprise: multi-platform applications on both the server and client sides, and object development.

Scott Heiber, IBM's program manager for object implementation, contended that Microsoft's Visual Basic does not provide the ability to build "true objects." Instead "Visual Basic" has been used mainly for client-side productivity applications, he said.

IBM's "Bas," on the other hand is designed for server as well as client-based applications, supporting the current rise of "network-centric computing," according to the program manager.

VisualAge for Basic lets developers use Visual scripting language to produce applications for a wide range of server and client platforms, as well as mainstream object environments and relational database management systems (RDBMS), "all in the same box," summed up the IBM exec.

From a single CD-ROM disk, Heiber elaborated, applications can be developed for OS/2, Windows 95 and Windows NT clients, in addition to OS/2, Windows NT, and AIX 6000 servers. Documentation is also included in the disk.

Server-based applications provide enhanced security and maintenance, Heiber said. Logic is operational when stored procedures and user-defined functions reside on the server, because they are "fewer calls moving across the network."

Also, unlike Visual Basic, IBM's VisualAge for Basic supports inheritance, polymorphism, and encapsulation, according to Heiber. "You can build classes and subclasses, and then use those to build new objects," he said.

The suggested retail price is US\$119.

IBM Canada Ltd. can be reached at (905) 946-6000. ♦

Comtronic adds accelerator card

Comtronic Computer Inc., of Markham, Ont., has announced the ExpertColor Series 325P 325P 83 Mega accelerator video card.

According to the company, the product provides up to 30 frames per second motion video quality on Pentium-based PCs. And, by the click of a mouse, the user can change resolution, color depth and refresh rates.

The suggested retail price is \$189.

Comtronic can be reached at (905) 479-8336. ♦

Switches and Routers —

Working Together to Build Scalable Networks

A special-purpose device intended to segment a LAN with the particular goal of providing additional bandwidth.

A general-purpose device designed to segment a network with the goals of limiting broadcast traffic and providing security, control and redundancy between individual broadcast domains.

by Gus Melen and Chuck Severino



Tom Ichniowski

For the past several years, resellers who provide products to network managers have had a variety of tools for building large, complex networks, including repeaters, hubs, bridges, routers and gateways. But recently a new tool — the LAN switch — has taken the networking industry by storm.

The impact of LAN switching has been dramatic, causing resellers and network administrators to rethink the fundamental rules of network design and leading to confusion about the placement of switches and routers in corporate networks.

Switching and routing serve different functions and most networking environments will be required to use both. In certain applications within a network, a switch provides the ideal solution. In others, a router is the most appropriate choice. And there are some applications for which either a switch or a router may provide a satisfactory solution based on a careful examination of network design goals.

Switching Technology

Switching technology operates at Layer 2 of the OSI Reference Model. The emerging popularity of switching products can be viewed as a resurgence of bridge technology in a simpler, lower-cost, higher performance and higher-port-density device. Like a bridge, a switch makes a relatively simple forwarding decision based on the destination MAC address contained in each packet. Generally, this forwarding decision does not consider other information buried deep inside the packet. Unlike a bridge, a switch can forward data with very low latency, providing performance that bridges-LAN performance.

Switching technology allows bandwidth to be scaled in both shared and dedicated LAN segments and can alleviate traffic bottlenecks between LANs. Today switching products are available for Ethernet, Fast Ethernet, FDDI and ATM technologies. In the near future, switching products will be available to add bandwidth in IEEE 802.5 Token Ring environments.

Switches Are Like Bridges, Only Faster

Like traditional bridges, switches provide many interconnecting benefits. Switches essentially segment the network into smaller collision domains, providing a higher percentage of bandwidth to each end station. Their protocol transparency allows them to be installed in networks running multiple protocols with little or no software configuration. Switches use the existing cable plant, repeaters and end-

station adapters without expensive hardware upgrades. Finally, their total transparency to end-stations makes administrative overhead very low, simplifying adds, moves and changes.

The use of application-specific integrated circuit (ASIC) technology allows a switch to simultaneously forward packets across all ports at wire speed, providing much better performance than a traditional bridge.

Routing Technology

Routers operate at Layer 3 of the OSI Reference Model and have more software features than a switch. Forwarding at a higher layer than a switch, a router distinguishes among the different network layer protocols such as IPX, AppleTalk or DECnet. The additional protocol knowledge available to a router allows it to make a more intelligent forwarding decision than a switch. Unlike a switch, a router provides users with seamless communication between individual LAN segments. And unlike a switch, a router determines the logical boundaries between groups of network segments.

A router provides a firewall service since it forwards only traffic that is specifically addressed to go across it. This eliminates the possibility of broadcast storm propagation, the transmission of packets from unsupported protocols, and the transmission of packets destined for unknown networks across the router.

To accomplish its task, a router must perform two basic functions. First, the router is responsible for the creation and maintenance of a routing table for each network layer protocol. These tables may be created either statically via manual configuration or dynamically using a distance-vector or link-state routing protocol. After the routing tables are created, the router is responsible for identifying the protocol contained in each packet, extracting the network layer destination address and making a forwarding decision based on the data contained in the specific protocol's routing table.

The enhanced intelligence of a router allows it to select the best forwarding path based on several factors rather than just the destination MAC address. These factors can include the hop count, line speed, transmission cost, delay and traffic conditions. This increased intelligence can also result in enhanced data security, improved bandwidth utilization and more control over network operations. The disadvantage is that the additional frame processing performed by a router can increase latency, reducing performance when compared to a simpler switch architecture.

"The emerging popularity of switching products can be viewed as a resurgence of bridge technology in a simpler, lower-cost, higher performance and higher-port-density device."

Where to Use Switches

One of the key factors determining the success of any network design is the ability of the network to provide satisfactory interaction between clients and their server. No matter what improvements are made to the campus backbone or WAN infrastructure, users judge a network by its ability to provide prompt and reliable service.

A switch is a special-purpose device specifically designed and tuned to address LAN performance problems resulting from bandwidth shortages and network bottlenecks. Switches solve these problems by providing high aggregate bandwidth, high packet throughput and low latency at an extremely low cost per port. They are not designed with the principal goal of providing absolute control over the network. Switches should be viewed as bandwidth providers, not as the ultimate source of security, redundancy, control, or network management.

Where to Use Routers

Unlike a switch, which is specifically designed to add bandwidth capacity, routers are designed to provide security, policy and network management.

One of the primary functions of a router is to provide traffic isolation to help diagnose problems. Because each port of a router is a separate sub-network, broadcast traffic is not forwarded across the router. The definition of network boundaries makes it easier for a network manager to provide redundancy and to isolate problems resulting from broadcast storms, misconfigurations, faulty hosts and equipment failures. Routers keep these potentially disruptive events local to the area in which they occur, preventing them from spreading across the corporate network.

A router provides intelligent packet forwarding. Since a router operates at Layer 3 of the OSI Reference Model and has access to more information than a switch, it has the ability to calculate the most efficient path across a network based on a combination of metrics such as delay, throughput, reliability and hop count. In addition, routers may employ other methods such as "policy" to control the flow of traffic and restrict the propagation of routing information. These capabilities are most effective when WANs are used or when multiple LAN technologies are involved.

Another important benefit of routers is their ability to support many network topologies that provide native redundant paths. Unlike switches and bridges, which require a loop-free topology, routers impose no constraints on network topologies, not even on those that contain redundant paths and active loops.

Segmentation

Probably the area of greatest confusion about switches and routers is their ability to segment a network. Since switches and routers operate at different layers of the OSI Reference Model, each device performs a unique type of segmentation designed to benefit different applications needs. A switch is a special-purpose device intended to segment a LAN with the particular goal of providing additional bandwidth. A router is a general-purpose device designed to segment a network with the goals of limiting broadcast traffic and providing security, control and redundancy between individual broadcast domains.

Future of Switching

The pace of switching technology will continue to decline as a result of enhanced ASIC development coupled with efficient manufacturing and distribution techniques. As the cost per port of switches approaches

that of separating hubs, many users will elect to install switches.

The widespread availability of low-cost switching technology will have implications for both building and campus backbone networks. There will be an increasing demand for higher-density backbone switches with a large number of high-speed ports to connect the links from individual workgroups. Eventually, the majority of designs will be an dedicated 10Mbps Ethernet connections, the majority of servers will be on switched high-speed connections and ATM will be deployed in building downlinks and campus backbone networks.

Future of Routing

Routing is the key to developing successful inter-networking solutions. The challenge for routers is to provide products that will integrate switching with routing for a systems approach to network design.

Initially, switches will meet all of the organization's bandwidth scaling requirements and provide the performance that is needed. As network complexity increases, however, routers must work with network managers to control their new switching environments using segmentation, redundancy, firewalls, and security to make them work efficiently. At this point the availability of single-vended routing will be essential to grow and scale large switched networks. **□**

Get *MaxNet* in general managers' network systems for XCom Console Inc. in Toronto. Check *SecureNet* in marketing engineers' network systems for XCom Corp., Santa Clara, Calif.

"No matter what improvements are made to the campus backbone or WAN infrastructure, users judge a network by its ability to provide prompt and reliable service."

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166MHz Pentiums

Prepped For Performance And Price

by Chris Fisher, Steve Hofstad and Tim Bingham-Walker

One of the largest concerns for individuals, and in many cases companies purchasing new computers, is the concern that a computer purchased today will be obsolete tomorrow. One of the most common questions we hear is: "Should I wait for prices to come down or for new technology to become available?"

Invariably, the answer is "it depends." The computers you purchase today will be obsolete in terms of current technology at no time. But, and this is a big but, this does not mean they will cease to be able to do the work they were purchased for or that they will not yield in return on investment, whether this be in a tangible or an intangible form.

Prices of technology will always be on a downward trend in relation to the particular product's life cycle, and those will always be something new on the way in the coming months. To this end, we put it to people: if you can do more or useful work with what is available today, don't wait to make your purchase.

The life of computer technology is a lot like animal years. To a dog, one human year is seven dog years; then for every breed of dog, if they live past 10 years, they're on borrowed time. Computer technology at the system level has the same characteristic. A system might serve its master for 10 years, but at this stage it's becoming quite decrepit. At the component/product life cycle level, the story is quite different, with the various parts having animal years more akin to the goat than the dog.

Indeed, for items such as processors and expansion cards, one human year could be as much as 150 years in marketing, production or sales.

We got our first preview of Intel's MMX technology this month. The computer in question, from Compaq, was benchmarked and evaluated but is not included in this survey as the unit will not start shipping until the first quarter of '97. Still, the 166MHz processor scored extremely well on standard business applications benchmark. In fact, the machine literally left the competition in the dust, outperforming the fastest computer in this survey by 10.3 percent.

This healthy increase in computational ability isn't even a product of MMX; in fact, we saw few programs available that take advantage of this already, and certainly none in our general purpose business benchmark. Rather, the increase in performance is due to the extra 16KB of Level 2 cache on the package. 32KB is opposed to 16KB on today's Pentiums. As the buying public catches wind of this performance increase on the horizon, it may make disposing of stocks of vanilla Pentium's a little more difficult with more people than usual holding out on a new computer purchase in favor of waiting for the ever looming newer, faster technology.

The New Computing Midrange

This holiday season, we look at the upper midrange (or probably by the time you read this, the midrange) 166MHz Pentium computers. As usual, readers and the industry in general have upped the ante in terms of price, performance and features. Many systems are loaded with the newest 33.6Kbps modems, an extremely capable, feature-rich graphics card from companies such as ATI or Matrox, a speedy CD-ROM drive, 8X or 10X speed.

Implementation of these new components, as well as the almost ubiquitous movement to VXL and HX PC buses, has again moved performance to new levels for this class of computer. The computational performance we are beginning to reach is breathtaking, even around the mid-level, but it is the sustainability of these systems, due to their extremely competitive pricing that makes for the real excitement.

As per usual, the concise information on system configurations and performance can be found in the accompanying chart. The vendors' comments and views, as well as our notes on the systems can be found in this review.

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Advance Interface Express Micro P166

Reseller Authorization:

Reseller restrictions cannot be geographically located near existing authorized dealers. Authorization is subject to the vendor's discretion.

Suggested Retail Price:

\$3,699.99

Street Price:

\$3,199.99

Marketing Support:

This includes: national end-user advertising, dealer referral program, local product shows, marketing materials, product brochures, PCF display, demo evaluation units, dealer demo incentive program, and product training.

Maintenance Relationship:

Resellers are the front end of customer support. Depot warranty is available for both residential and end-users across Canada. Optional on-site service is available.

Volume Discounts:

Prices are based on a volume and per order basis.

Demo Unit Availability:

Demo units are available on an individual basis.

Additional Channel Support:

- 24-hour toll-free technical support
- Internet product information
- Local product road shows

Advance Interface's View Of The Market:

Advance Interface says, "Multimedia is becoming the trend in PC market. Over 50 per cent of our desktop systems are MPC-equipped."

System's Strengths:

The company says it uses the best possible components with an emphasis on pricing and performance. "With Matrox Mystique Video 3D we deliver our MPC 166 system with lightning fast 3-D video. All systems are CSA/DMC approved, Windows 95 and Windows NT certified."

Editor's Notes:

The system uses a new Mystique video card and the popular 2.1GB Quantum Proball HD

It has a full set of features, including 512KB of pipeline cache, and a 33.6Kbps fax modem. Performance was not quite what we've used to from Express Micro systems, but nonetheless, a good overall value.



COMPUCON CIPV 166 Multimedia

Reseller Authorization:

Based on geography, 'Vicinity' is subject to the discretion of COMPUCON.

Suggested Retail Price:

\$2,899

Street Price:

\$2,799

Marketing Support:

- Will share cost on dealer's exhibition.
- Provides marketing materials.
- End-user leaders are referred to the nearest reseller.

Maintenance Relationship:

- Resellers are the front end of end-user support.
- Final warranty is by the manufacturer at depot.

Volume Discounts:

None.

Demo Unit Availability:

One system is available per authorized reseller for a 10 per cent discount.

Compucon's View Of The Multimedia Computer Market:

Compucon says, "Demand for multimedia machines will increase in step with technological and network improvements. Multimedia systems will become the basic system for the home and workstation."

System's Strengths:

All Compucon systems are designed to meet industrial server standards as if they will be running 24 hours non-stop. All components and internal system layout are well selected and engineered. All systems are designed and built for multi-media and communication by taking the EMI (electro-magnetic interference) into account. EMI would affect performance of multimedia part and also compromise stability. Reliability, viability, com-

patibility (with major operating systems and applications), connectivity and performance are the key strength of Compucon machines. All machines come with well-documented technical information for future upgrades in hardware and software usage.

Editor's Notes:

This was one of the fastest systems in the survey. This system is loaded with all quality components, including a fast video WinFast video card with 2MB of EDO RAM and a Quantum Proball 2.1GB hard drive for high transfer rates. The system includes a 33.6Kbps fax modem, and comes with a three-year warranty.

Comtex

Reseller Authorization:

Reseller authorization is based on geographic location.

Suggested Retail Price:

\$2,649

Street Price:

\$2,619

Reseller Price:

\$2,350

Marketing Support:

- Co-op funds for marketing and advertising.
- Cost sharing for exhibitions.
- Literature and brochures.
- Internet and telephone support.
- Product training seminars.

Maintenance Relationship with Reseller:

Authorized service centers across western Canada.

Volume Discounts:

Volume discounts are based on the quantity ordered.

Demo Unit Availability/Restrictions:

Available only to authorized dealer.

Additional Channel Support:

This includes point-of-sale support and a scheduled road show.

Product Strengths:

Comtex includes the Microsoft SideWinder game pad with this multimedia offering.

Editor's Notes:

This is one of the few systems to use the new VIDEO chipset from S3. According to the scores we obtained, the card performs reasonably well. The overall score was relatively low on this machine, mostly due to a slower hard drive. All in all, the system is complete, and competitively priced.

Comtronic Computer

Reseller Authorization:

Must be a reseller VAR, SI or consultant.

Suggested Retail Price:

\$2,349

Street Price:

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Reseller Price:

\$2,000

Marketing Support:

• National-wide marketing and advertising campaign for products in both industry and end-user publications.

• POS marketing materials and product literature for approved dealers.

• Custom co-branding programs for individual resellers.

• Product sales incentive programs.

• Product training.

Manufacturer Relationship:

• Contractor's and manufacturer's warranty on all products sold.

• Two-year parts and labor warranty on all systems.

• On-site service available.

• Nation-wide complete service and RMA department for all resellers and their customers.

Volume Discounts:

Dealer pricing is determined on an individual basis depending upon quantity, nature of order, and purchasing arrangements.

Demo Unit Availability:

Custom evaluation units are available for testing, upon approved dealer request.

Additional Claims of Support:

• National 1-800 hotline.

• Web site with an on-line catalog and product information.

• Technical service and support through E-mail correspondence and fax-back.

Editor's Note:

This system was very well priced, but performance on this system was lacking due to the use of an Overdrive processor as opposed to an original Pentium CPU. It includes a 33.6Kbps fax modem, a fast Western Digital 1.6GB hard drive and a 30X CD-ROM by Accu.



LCF Advanced Technology iNET P166 VX-M computer

Reseller Authorization:

There is an application for authorization. However, resellers are required to purchase at least \$10,000 a month from LCF to maintain authorization status.

Suggested Retail Price:

\$2,600

Suggested Price:

\$2,700

Reseller Price:

\$2,380

Marketing Support:

LCF will provide marketing materials such as system brochures to the reseller on request. Also, LCF will run advertising in major computer magazines, and will display the iNET system at Comdex and Pacific Rim shows in Canada to increase exposure.

Manufacturer Relationship:

Resellers are the frontline for customers, but LCF will also provide technical support.

Volume Discounts:

Volume discounts are available for resellers who order more than 50 pieces at a time.

Demo Unit Availability:

Demo units are available at special prices—one unit per location.

LCF's View Of The Multimedia Computer Market:

LCF says, "The multimedia computer market will increase dramatically in the coming year. Due to the popularity of the Internet and multimedia software, the multimedia computer will take up a significant share of the whole computer market. Due to the ubiquity of multimedia software, most computers will require multimedia to be the market standard."

System's Strengths:

According to LCF, "The strength of our multimedia systems is their quality, reliability, compatibility, stylish look, and exceptional technical support. Since we only use the name-brand components in our systems, quality is assured. In addition, through strict quality control in assembly and strong technical support team, we believe that customers are well satisfied."

Editor's Note:

This system is priced higher than most of its competitors but offered above-average performance and a host of quality components such as the ATI M3 Expression and a USB 33.6Kbps fax modem.

Mynix Technology

Reseller Authorization:

Reseller must have an office or a storefront with at least one technical support person.

Suggested Retail Price:

\$2,985

Suggested Price:

\$2,165

Reseller Price:

\$1,885

Marketing Support:

• Product brochures.

• End-user leads go to resellers.

• Co-advertising with selected dealers.

• Web page technical support.

• Periodic on-site training.

**Manufacturer Relationship:**

Dealer support is provided with the Mynix Depot.

Volume Discounts:

• 10 — two per cent off.

• 50 — five per cent off.

• 100 — eight per cent off.

Demo Unit Availability:

Demo units are available to volume customers.

Additional Claims of Support:

• Bilingual documentation.

• Optional on-site service for all systems.

Mynix's View Of The Multimedia Computer Market:

Mynix says, "There will continue to be tremendous growth in the multimedia market. We position our product in two sectors: the corporate sector with video conferencing and multimedia applications, the home computer market."

System's Strengths:

According to the company, Mynix systems pass the ISO9000 system for quality control. They are Win95, NT and Novell certified.

Editor's Note:

Mynix's offering is competitively priced, and an overall good value. Customers will like the new Matrix Mystique and the 28.8K fax modem included in the package. Due to incompatibility problems with our benchmark suite, this machine was unable to complete the testing process.

Packard Bell

Marketing Support:

• SEDC show.

• POS.

• Co-op advertising.

• Monitor wraps.

• Training reps.

Manufacturer Relationship:

Resellers may offer a service contract option. Packard Bell offers an optional service contract above the one-year full service warranty.



Demo Units

Demo units are available in limited quantities; restrictions apply.

Additional Channel Support

- Spot sales
- Product flyers
- Co-op advertising
- Freeshoots
- Monitor wraps
- POP marketing
- Sales and training reps
- Marketing support

System's Strengths

Packard Bell says, "By offering the Media Select unit with instant Internet and TV viewing, we feel we are offering something no one else can offer, something the consumer will find exciting and useful."

Editor's Notes

Packard Bell's latest line includes a full set of multimedia components, including the option of output to TV. The system's performance was average and features a 2GB Monitor hard drive and a 33.6Kbps fax modem.

suggested dedicated support personnel.

Volume Discounts

Volume discounts are negotiated with each dealer.

Demo Unit Availability

Demo units are available. Terms and conditions are based on customer requirements.

Additional Channel Support

- National support through Patriot support personnel
- Depot and on-site warranties for single and multiple years depending on customer needs
- Warranty programs are custom-tailored

Patriot's View Of The Multimedia Computer Market

Patriot says "The multimedia computer market will continue to grow and expand. The advent of MMX technology combined with more powerful processors and video cards, will keep customer interest high. A combination of lower prices and increased usability will continue to fuel the market."

System's Strengths

According to Patriot, these include quality components, on-site warranty coverage, and several software bundles to choose from and complete customization.

Editor's Notes

Patriot offers one of the less expensive systems in the survey. Unfortunately due to an incompatibility with BAPCo (our benchmarking software), the overall system performance could not be calculated.

Marketing Support

- MCO Funds
- Demo Program (discount prices on demo units)
- Price protection
- Third-party support to cover appropriate POS, and support materials
- Maintenance relationship with reseller
- One-year parts and labor on-site warranty
- Optional extended warranty program (three-year on-site service with next business day response)

NASC-certified resellers can perform services on behalf of NEC.

Volume discounts

The price the reseller pays is based on the relationship with the distributor.

Demo unit availability/restocking

- One unit per store location
- "One-to-show, one-to-go" program

Additional channel support

- WebWay — NEC's exclusive Web site for Ready customers
- Telesales — NEC's support group at 1-800-284-4484
- Customer service and support 1-800 number, seven-day, 24-hours a day technical support

FoxFacts program

NEC's View Of The Multimedia Computer Market

NEC says "We want to offer more than just the basics. We offer premium sound, premium audio, premium power. NEC is starting to get out of the 'value' category and moving more into the premium category. We're taking things like video and moving to 3-D graphics, we're providing top-of-the-line sound quality."

NEC's Comments

According to the company, "People want a powerful PC that is easy to use, has the latest technology and provides a good value. Our Ready PCs have incredibly fast Pentium processors at speeds up to 200MHz, the Media video help wizard and WebWay, with one-button Internet access to meet these demands."

Editor's Notes

This machine is well designed and offers excellent overall performance. NEC has on-board itself, with the Ready 9628 giving the consumer a full set of quality components and extras such as a 100MB Zip drive, a 33.6Kbps modem and loads of free-ware software. Furthermore, The company has managed to put out a system that performs better than most of the smaller vendors that are typically quicker to bring higher performance machines to market. While the system is the most expensive we reviewed, given the



Patriot Computer

Reseller Authorization

Determined on a case-by-case basis.

Suggested Retail Price

\$2,697

Marketing Support

Emphasis on a per incident basis.

Maintenance Relationships

Resellers are encouraged to act as first-line support to the end user. Patriot will act as a second-level support group. Resellers are



NEC

Reseller Authorization Requirements

It varies depending on reseller size and location. NEC is rolling out a new Retail Partner Program (called "More Power To You") targeted at smaller resellers buying Ready systems from NEC's main distributors.

Estimated Street Price

\$3,949 (modem not included, subject to change)

Doc 96

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Another New Innovation From QDI SpeedEasy

(Hong Kong, November 7, 1996) - QDI (Quantum Design (HK) Limited), a top ranked motherboard manufacturer in Asia Pacific, today announce an unprecedented technological breakthrough in the motherboard products - *SpeedEasy*.

A GREAT IDEA: *SpeedEasy* is a new user friendly technology for easy CPU speed setup during system installation or CPU upgrading. It represents the first perfect motherboard in the world.

TECHNICAL CONTENT: *SpeedEasy* is an enhancement of system BIOS. This requires superb techniques in software BIOS handling and is a reflection of the strength of the QDI BIOS team.

Traditionally, it has been essential for system integrators to use jumpers to enable or disable different motherboard configurations. The increase in complexity of CPU voltage and frequency choices have made the procedure even more complicated. If a jumper is set improperly the PC can't be turned on or the CPU will be burnt out. *SpeedEasy* has eliminated such problems as all jumpers have been replaced with a user-friendly BIOS setup procedure.

ADVANTAGES:

1. The correct CPU speed can be set quite simply in BIOS.
2. Users can select the CPU speed at any time without opening the system case or needing to refer to a complicated user manual.
3. BIOS can automatically set the CPU core and I/O voltage according to the CPU type selected.
4. Users do not need to find out the locations of different jumpers and thus, the possibilities of wrongly setting the jumpers will be zero.

DELIVERY: *SpeedEasy* will first be found in QDI's Explorer II Pentium motherboard which is using Intel's 430VX chipset. Mass production is already available and it will be officially launched during Comdex Fall '96 at Las Vegas, USA.

"The introduction of *SpeedEasy* demonstrates that we have moved a giant leap forward in technology," said Mr Anders Chering, Vice President of QDI. "Being the pioneer of such a design, we strongly believe that *SpeedEasy* will penetrate into the PC market quickly and will be the mainstream of motherboard technologies," he added.

BACKGROUND:

QDI is the largest PC motherboard manufacturer in Hong Kong and distributes their products through 21 overseas offices. With strong R&D capabilities, QDI consistently introduces products incorporating with the latest technologies. The manufacturing base of QDI is located in Legend Science and Technology Park in Huiyang, China. Besides, QDI has three R&D centers in San Jose, Shenzhen, and Hong Kong respectively. QDI has successfully been accredited the ISO9001 in 1995.

SpeedEasy is a trademark of QDI.

Other trademarks used herein are the property of their respective owners.

Contact: Edmond Cheng
Tel: (852)25164415
Fax: (852)25164397
e-mail: cdi@legend.hk legendgrp.com

Contact: Michelle Yue
Tel: (852)25164478
Fax: (852)25165397
e-mail: ysf@legend.hk legendgrp.com

FOR IMMEDIATE RELEASE
NOVEMBER, 1996

166MHz Pentiums Test Results



	A-Open	Compucon CPU 166 Multimedia	Comstar	TK-DM Dante	Express Micro	LCI NET VX P166-320
Processor	Pentium 166	Pentium 166	Pentium 166	Pentium 166	Pentium 166	Pentium 166
Cache	256KB pipeline	256KB pipeline	256KB pipeline	512KB pipeline	512KB pipeline	512KB pipeline
RAM	32MB	32MB EDO	16MB EDO	16 MB EDO	32 MB EDO	32MB EDO
Video Card	S3 Trio64	WinFast 3D 580	S3 V80E	S3 Trio64	Mirage Mystique	ATI 3D Express
Video Memory	1MB DRAM	2MB EDO	2MB DRAM	2MB DRAM	2MB SGRAM	2MB EDO
Monitor	None	None	None	None	None	None
Sound card	Acer AW03Pro	SB-16	Event 16-ec	SB-16	ES01660	SB-16
Hard drive	Western Digital 1 30GB EIDE	Quantum Fireball 1 30GB EIDE	Maxtor 1 30GB EIDE	Fujitsu 1 7GB EIDE	Quantum Fireball 2 1GB EIDE	Quantum Stream 1 7GB EIDE
CD-ROM drive	Acer 10X	Panasonic 8X	Acer 10X	Sony 8X	Toshiba 8X	Toshiba 8X
System BIOS	AMI	Award	AMI	Award	AMI	Award
Plug and Play support	No	No	No	Yes	No	Yes
Operating System	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95
Extras	Robot 3D file modem Speakers	3D B file modem Speakers	3D B file modem Speakers	USB 3D B file modem Speakers	Sagcon 3D B file modem Speakers	USB 3D B file modem Speakers
BAPCo Benchmarks						
Desktop publishing	121	129	104	107	106	127
Desktop graphics	126	145	134	138	115	149
Desktop presentation	32	147	117	115	110	138
Word processing	121	129	108	108	106	128
Spreadsheet	128	129	130	130	142	132
Database	123	134	108	114	104	134
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Web address	www.aopen.com	www.compucon.com	www.comstar.com		www.nmi.com	
Suggested retail price	\$2,089	\$2,695	\$1,799	\$2,550	\$2,999	\$2,899
Street Price	\$2,189	\$2,799	\$1,749	\$2,600	\$2,799	\$2,700
Retailer Price	\$2,069	N/A	\$1,695	\$2,140	N/A	\$2,390
Warranty	3 years	3 years	3 years	3 years	3 years	3 years

*estimated street price



Mycomp Vantage	NEC Ready 9628	QA Comp	Packard Bell PLT PRO 690	Patriot	Santack	STD	Ultrat
Pentium 166	Pentium 166	Pentium 166	Pentium 166	Pentium 166	Pentium 166	Pentium 166	Pentium 166
256KB pipeline	256KB pipeline	256KB pipeline	256KB pipeline	256KB pipeline	256KB pipeline	512KB pipeline	512KB pipeline
16MB EDO	32MB EDO	32MB EDO	24MB EDO	16MB EDO	16MB EDO	16MB EDO	32MB EDO
Matrox Mystique	ATI Rage ST	Matrox Mystique	Si VRGE	Si Trio64	Tidant 9682	Cirrus Logic 5446	Trang E78000
2MB SGRAM	2MB EDO	2MB SGRAM	2MB DRAM	1MB DRAM	1MB DRAM	2MB EDO	2MB SGRAM
None	None	None	None	None	None	None	None
ESB1680	SB-16 compatible	SB-16	SB-16 compatible	Just 16	Pro 16-ct	SB-32	Yamaha 711
Seagate	IBM	Western Digital	Maxtor	Maxtor	Quantum Fireball	Seagate	NEC
3.1GB EIDE	3.1GB EIDE	3.1GB EIDE	2GB EIDE	1.3GB EIDE	2.1GB EIDE	2.1GB EIDE	2.6GB EIDE
ATI 8K	ATI 8K	Creative Labs 8K	NEC 8K	Goldstar 8K	Goldstar 8K	Panasonic 8K	Hatch 8K
Award	Phoenix	Award	AMI	Award	Award	AMI	Award
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Windows 95	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95	Windows 95	None
Masson 39.9 for modem	30.9 for modem	USB 39.9 for modem	33.9 for modem	Speakers	USB 39.9 for modem	Super 33.9 for modem	Blower 33.9 for modem
Speakers	10W 16K 3p Speakers	MIDI digitalized	TV tuner	Speakers	Speakers	TV Output	16MB caching controller
							Speakers
110	129	117	107	100	114	113	129
125	170	130	135	126	183	131	150
132	139	135	124	112	125	133	140
115	132	130	122	105	118	114	129
163	136	127	128	119	114	131	114
64A	128	123	113	64A	116	117	134
64A	138	130	123	64A	117	121	130
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\$2,205	\$2,943	\$2,369	\$3,299*	\$2,653	\$1,989	\$2,999	\$2,374
\$2,108			\$3,299	\$2,653		\$2,689	\$1,895
\$1,335			N/A	N/A		\$2,450	\$1,895
3 years	1 year	1 year	1 year	2 years	2 years	2 years	2 years

features of this machine the extra-cost seems highly acceptable.



GA COMP

Authorization Requirements:

Dealers must provide service and support, with a minimum of two or three dealers per city.

Marketing Support:

- National-wide advertising.
- Ready-to-use marketing materials.

Demo Unit Availability:

Demo units are available, with restrictions.

Technical Support:

- Dedicated Internet technical support.
- Web site includes updated documentation, and new drivers.

Vendor Comments:

GA Comp says "GA's intent is to provide quality computers for corporations and the general public. We provide up-to-date configurations and sell this technical support. We use only quality components, have strict quality control, and a complaint handling system to ensure total customer satisfaction."



Samstack

Authorization Requirements:

Dealers need to set up a basic account.

Marketing Support:

Dealers can offer their own support.

Maintenance Relationship:

All systems include a two-year parts and labor warranty.

Volume Discounts:

Yes.

Support:

Dealers can access a 1-800 technical support line.

Vendor Comments:

The company says "Samstack is a brand name with good pricing, making it easy to sell. Samstack is a brand line, Canadian based distributor of high quality brand name PC components, peripherals and multimedia prod-

ucts. Headquartered in Markham, Ont., Samstack also has offices in Ottawa and Montreal.

Editors' Note:

This is a well-priced system that performed well considering its 1GB of memory of RAM. The system comes equipped with some good quality components including a 2.1 GB Quantum Fireball hard drive and a USB 28 Kbps fax modem.



STD

Reseller Authorization:

Resellers must fill out credit and dealer application forms, provide sales forecasts (rolling forecast), purchase a demo unit for two months, and maintain a monthly/quarterly purchase quota.

Suggested Retail Price:

\$2,999

Street Price:

\$2,699

Reseller Price:

\$2,450

Marketing Support:

- Joint advertising locally.
- Link or listing from STD's Web site.
- National and regional advertising.
- Special promotional discounts on products.
- First hand information on new products.
- Sales and technical training and seminars.

Maintenance Relationship:

- Channel marketing assistance.
- Joint visits with resellers to corporate customers.

Volume Discounts:

- Monthly or quarterly visits.
- Resellers can offer their own support, or join STD's national on-site support program.

Volume Discounts:

Volume discounts are available, per purchase order. There are also monthly, quarterly, and yearly volume rebates.

Demo Unit Availability:

Demo units are available for location at a certain percentage off the regular dealer price. The limit is two different models per area,

and they must be kept on display for two months.

Additional Channel Support:

- There is technical support through a 1-800 number, E-mail and a BBS.
- Web site technical support provides driver downloads and answers other questions.
- There is nationwide support through 11 offices across Canada.

STD's View Of The Multimedia Computer Market:

STD says: "We believe the multimedia system is moving away from being a personal system to a family system. Users can enjoy the computer with the family members on a big screen TV using the Internet, playing 3-D multi-player games, banking, or for education. STD will move to promote a full line of family room multimedia systems for all family members."

System's Strength:

According to the company: "We use the highest quality components including: 512MB Cache 486HX motherboard, Panasonic BX CD-ROM, Sound Blaster 32 3-D solid card, Super 33.6Kbps Internal modem, desktop gamestack microphone, Microsoft Natural Keyboard, and Yamaha 3 speakers. We also include comprehensive software bundles. All hardware is properly configured and software installed and ready to go."

Editors' Note:

The STD system comes with an amazing expense card, a TV device. This allows STD's computer to be used as a television set offering the same functionality as other television-based computers such as the Destination products from Gateway 2000. System performance was excellent when you take into consideration that this system was equipped with only 16MB of RAM as opposed to the 32MB or more of the other systems.

TK-IDM

Darius Discovery

P168MHz Multimedia

Reseller Authorization:

Resellers and VARs must have been in business for one year. Three-month commitments are required to have been in business for at least two years, or require references from other suppliers stating the consultant is knowledgeable and technical enough to serve their customers.

Suggested Retail Price:

\$2,700

Street Price:

\$2,600

**Retailer Price:**

\$2,140

Marketing Support:

- Co-op advertising based on sales per month
- Demo systems for trade shows and regular purposes

Maintenance Relationships:

Finally, systems can be shipped back to the vendor within the first 60 days, however, resellers must receive authorization first.

Volume Discounts:

Discounts are based on volume. Educational sales also receive special pricing.

Demo Unit Availability:

- Demo system purchases are available for three per cent off the reseller price
- Demo units can be customized

Additional Channel Support:

TR-1000 is in the process of setting up a fax board service.

TR-1000's View Of The Multimedia Computer Market:

The company says, "We feel multimedia is the future. In the past CD-ROMs and sound cards were only options. Today, 80 per cent of the systems we ship are built either a CD-ROM or sound card. We offer special multi-media packages, every month. We may do light modifications from month to month to meet market changes. We keep our multimedia products up-to-date by listening to our resellers' suggestions."

Systems' Strengths:

TR-1000 says the company configures all CD-ROM and sound cards for resellers so when they sell multimedia systems to their customers all the drivers are configured properly.

Editor's Note:

A newcomer to the pages of *Canadian Computer Magazine*, this system from Duxco features 312KB of pipeline cache and a USB 33.6Kbps fax modem. Overall performance was slower than expected as a result of a slower hard drive and video subsystem.

**Ultimat****Retailer Authorization:**

Resellers must provide reseller certificate and purchase a minimum of two systems at \$2,000 in parts per order.

Suggested Retail Price:

\$2,234

Street Price:

\$1,995

Retailer Price:

\$1,995

Marketing Support:

End-user leads are provided.

Maintenance Relationships:

Resellers can provide their own support, by changing parts themselves, or they can call Ultimat directly.

Volume Discounts:

- 1-10 — five per cent off street price
- 10-20 — seven per cent off street price
- 20+ — eight per cent off street price

Demo Unit Availability:

None, but demo units may be prepaid in advance, with credit issued when they are returned.

Additional Channel Support:

- Faxboard
- Internet site
- Toll-free hotline

Editor's View Of The Multimedia Computer Market:

Ultimat says there's been huge growth in the market. "The systems are positioned to provide the most speed for the least cost, while utilizing the latest technical advances in PC components."

Systems' Strengths:

The company points to the Intel i486 TR-1000 PCSet with Motorola 64000 i486 Cache Controller.

Editor's Note:

This system performed quite well but the imaging controller did cause some minor incompatibility problems. Additionally, the controller didn't seem to offer any significant performance boosts. Overall, the system is complete, with all accessories.

Editors' Choices**Performance**

In the category of performance, the systems from **Compucon** gets our vote. Of the systems in this survey, it managed to outperform its competition. We especially like the out-of-the-box experience from Compucon. The system documentation is excellent. The system packs a lot of performance and quality components.

Overall

For a combination of performance and overall system design, **NEC** takes the award in the category. Very dark looking, and very fast, NEC has done a great job in assembling this system. Quality components include the brand new 3D Rage chipset from ATI, and a built-in forage 160MB Zip drive, a huge 3.2GB hard drive from IBM, and a 33.6Kbps fax modem.

The system is more expensive than the others in the survey, but you also get the peace of mind that comes with NEC's support and warranty plan.

Price/Performance

If you want the most value for your dollar, **DA Comp's** system stands out as a clear winner. As with our two previously mentioned winners, this system features quality, brand-name components like a new Matrox Mystique, a 3.1GB Western Digital hard drive, and a USB 33.6K fax modem. The system's score was on the upper end of the scale, which made our decision easy. **DA**

Chris Fisher, Steve Ryals and Tim Stephens-Wells are CCM's Test Lab editors. They can be reached at Toronto, at (416) 333-8400.



Comdex Fall — for the thousands of brave souls who make the annual trek to the desert — namely, Las Vegas, the appeal is not for just (and) the opportunity to play the slots and perhaps get out of the cold. Rather, faced with massive crowds, long lines (200,000 attendees were anticipated this year), and a habitational shortage of taxis, many visitors would no doubt just as soon be elsewhere. Yet, something draws them back, year-after-year — the chance to put a finger to the pulse of the industry, to see the latest and greatest technologies, and to hear the thoughts first-hand from the movers and shakers of high-tech business.

That is, of course, easier said than done. Jason Chudnowsky, president and CEO of show organizer Softbank Comdex Inc., said the five-day trade show would see more than 10,000 product introductions. "There's no memory lane for this industry — only product upgrades," he joked. Moreover, he stressed that companies which are going to be successful, need to be prepared to continually reinvent themselves, he added.

Microsoft may be following that advice, as the company isn't sitting still with its Windows strategy. Rather, Microsoft announced that several hardware vendors (including Compaq Computer Corp., Compaq Computer Corp., Hewlett-Packard Co., Hitachi Ltd., LG Electronics Inc., NEC Corp. and Philips Electronics) were demonstrating another shipping handheld systems running the Windows CE simplified version of Microsoft's Windows environment. The handheld units on display at Comdex were often completely surrounded by interested show attendees, looking for a glimpse and a test drive of the new small form-factor systems.

Along with a host Windows interface users have access to tailored versions of Microsoft's Office products, such as Pocket Word, Pocket Excel and Pocket Internet Explorer.

Comdex strikes again: handhelds steal show

Intel's Andy Grove makes bold predictions about microprocessors of 2011

by Grace Casareto

While the individual vendors of course develop their own iterations of the Windows-CE compatible devices — it seems the Microsoft CE applications offering is already driving standardization in the industry. "Previous handheld products were all on different platforms," said James Schmitt, vice-president and general manager of Compaq Computer Corp., based in Houston, during a Comdex interview with *Canadian Computer Wholesaler*. Now, with "a common platform, a lot of people are developing horizontal and vertical markets," he said.

Competing for eyeballs

Intel CEO Andy Grove took the opportunity to outline his microprocessor of year 2011 — based partly on the so-called Moore's Law that sees processor speed double every 18 months.

The Pentium Pro microprocessor today includes 3.5 million transistors, operates at a frequency of 300MHz, achieving 400 million instructions-per second (MIPS), on a process (transistor size) of 0.35 microns. But 15 years from now in the year 2011, Grove said the processor will look something like this: it will include one billion transistors, it will operate at 10GHz and achieve 100,000 MIPS on a process of 0.07 microns. "We'll have a lot of problems to deal with to get there," said Grove, citing size issues and heat dissipation as concerns. More critical, perhaps than that, will be the cost of financing the new production facilities which will be required.

What is needed to grow the processor market, said Grove, are more "eyeballs." He explained "we are in a war for eyeballs," adding that 1997 will be the year more PCs are sold than televisions. "We're really after the number of leisure hours people spend with television."

In that light, Grove said the emerging processing power in PCs will need to be applied to driving new compelling content — such as interactive multimedia applications

with very high quality video and graphics. "The business we are in is the delivery of information and life-like interactive experience."

Canadians at Comdex

The emerging scenario of a simplified content creation and distribution poses interesting challenges for Canada, commented Ron Campbell, consul general for Canada in Los Angeles (and former Canadian Prime Minister), following a press conference at Comdex meant to promote Canadian high-tech companies.

While Canadian governments have set cultural protection policies in the broadcast realm, the new digital reality promises to be "harder to regulate," he pointed out. But she added it also means more opportunity, as Canadians will be able to create and distribute their content throughout North America and worldwide on a mass level playing field. "This also helps to break the monopoly," she said, referring to the U.S. cultural industries.

The government-sponsored Canadian pavilion at Comdex included Toronto-based LaserMedia, which launched the Active Arts interactive fitness video software that adjusts the workout on a daily basis, to provide the user with a continuous challenge. It's priced at \$29.95.

And Calgary-based Azim Multimedia was previewing the Know Your Baseball CD-ROM — the multimedia essence of the Official Little League Baseball Education Program for players, coaches and managers. It will cover the fundamental skills of baseball such as throwing, catching, fielding, batting, basing, pitching and base running, plus the basic strategies of defense and offense.

"There's so much creativity and energy coming from these small companies," said Campbell. **CCW**

Grace Casareto is Editor of Canadian Computer Wholesaler. She can be reached at gcasareto@ccw.com

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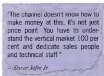
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Look who's talking

Is voice recognition finally coming into its own?

by Paul Lee



If computers could talk, you might soon hear one asking, "Are you talking to me?"

Indeed, your answer might be, "Yes, now shut up, open Word and take a message."

Speech recognition — operating system navigation and dictation — is now part of IBM's OS/2 Warp 4 and will most likely be a part of upcoming versions of Microsoft Windows. But dozens of computer users



have not yet ventured as inclination to talk to these computers, which begs the question: can resellers profit by adding value to speech-recognition applications?

For the last few years, pundits have predicted that speech recognition would be the

next big thing in desktop computing. In his book *Desktop Dictation*, computer guru John C. Dvornak called speech recognition the "killer application" of the 1990s. And a 1993 report from Sage Research, in Natick, Mass., predicts the PC speech-recognition market was set for dramatic expansion.

It hasn't quite worked out that way.

In 1994, William Morel, who publishes *Speech Recognition Update Monthly* (<http://www.msu.com>), from his office in Berkeley, Calif., predicted the demand for all

systems containing speech-recognition technology would reach US\$24.5 billion by the year 2000. He no longer makes dollar predictions. "Voice recognition is like the gross national product. How do you determine what part of the entire computer industry is voice when voice recognition will be incorporated into almost everything?"

Morel admits, "Speech recognition has grown fastest in the telecommunications industry where it makes sense to replace one of the dual-end interfaces with voice. It has grown slower on the PC because of the good GUI."

Speech recognition also requires fast processing speeds and lots of RAM. In operation, speech recognition has remained virtually a non-starter on desktops except in vertical markets, primarily legal, medical and the aviation market where companies use speech recognition to help employees overcome repetitive stress injuries.

Canadian Demonstrate Speech Recognition Success

"Tapping into vertical markets has huge potential," says Oscar Jaffe Jr., president and CEO of Edmonton-based AMASS Systems Inc. "You could live very comfortably working five per cent of the legal and medical pie if you cater to these needs."

Turning to the speech-recognition needs of the legal and medical professions is exactly what AMASS has done. The company serves virtually all its revenue integrating speech-recognition products for these markets and has opened offices in Calgary and Vancouver. AMASS also plans to open an office in



Toronto next year primarily because Jaffe has not been able to find many resellers willing to add value to speech-recognition products for vertical markets.

"The channel

doesn't know how to make money at this. It's not just price point. You have to understand the vertical market 100 per cent and dedicate sales people and technical staff."

Jaffe says comparing speech recognition to Lotus Notes. "You don't make your money selling state; you make your margin on customization. Resellers think a speech-recognition is plug-and-play and it's not."



Morel agrees the "economies are there" for speech-recognition VARs and SRs to profit from customization. "You can add value in the legal and medical markets. You can justify your mark-up for good vertical-market speech-recognition products."

The major OEM players in the speech-recognition field are Watson, MA-based National Applied Intelligence Inc., Newton, Mass.-based Dragon Systems Inc., and IBM.

Corp. out of White Plains, NY. Each company produces its own speech-recognition engine, the digital signal processor that converts vocal algorithms into digital text and produces navigation and dictation systems for consumer and vertical markets use.

Last summer, Kellogg Communications Inc., the Canadian developer and distributor for LawTalk and OffiCoTalk, popular speech-recognition products for the legal profession



and for office use, unassociated with Post Data Ltd. to form WildCard Technologies Inc. based in Richmond Hill.

The merger combined Kalven's speech recognition knowledge with Post Data's fax communications and LAN expertise. The new company distributes LawTalk and OfficeTalk, speech recognition applications running on all three OEM speech recognition engines — through more than 300 dealers in Canada, the U.S., U.K., Australia, New Zealand and South Africa. According to a spokesperson, WildCard is also "pursuing the integrated 'enabling market' by developing network connectivity and Computer Telephony Integration (CTI) incorporating speech recognition and voice, data and fax capabilities for Internet and intranet applications."

Saving several flavors

Speech recognition software comes in several flavors.

Navigation or command-and-control software enables users to voice control the operating system and applications. For example, to open your Microsoft Word software, you'd say, "Open Word." You'd retrieve a file with "Open filename" and print with the command "print file."

Dictation software enables the computer to recognize speech that it converts to text or data. Effective dictation packages include optional software so users can keep their hands off the keyboard or mouse and still control their application and operating system.

Users of discrete speech systems must pause briefly between words for the system to take dictation. Processor and memory-hungry continuous speech systems let the user speak at a more conversational pace. These tend to be limited vocabulary packages used for data entry or other narrow-vocabulary-based applications.

Speaker-dependent systems require anywhere from two hours to a half-day of training so they can recognize the user's speech patterns. Different users can operate a speaker-dependent software package on one PC as long as each user trains the application and saves his or her voice profile. Speaker-independent systems need almost no training by the speaker, although they may have difficulty understanding persons with accents or speech impediments.

Speech recognition is also used to learn foreign languages through interactive systems that speak a phrase, have you repeat it, and evaluate your performance. And telecommunications companies are using speech recognition to add Directory Assistance services while reducing operator workload.

Freeing the Hands

Speech recognition dictation can either replace a support person or free up a support person for more productive duties, says Mervel. Also, the user gets work back immediately rather than waiting 24 hours for work to be transcribed.

One lawyer who asked not to be named described himself as "not very computer-literate and a poor typist" and said he shed away from computers before using speech recognition systems for dictation. "I didn't think it would be practical to be working on files and

thinking of alternative means while trying to type," he said.

But after a few weeks working with his speech recognition applications, he began seeing productivity benefits. He now talks days of dictating into dictaphones "the bad old days" but admits things moved slowly until he trained the system to his voice and set up "hotkey plates" (voice menu phrases that produce document templates and standard paragraphs).

Indeed, industry players predict that as speech recognition is incorporated with operating systems it will help workers. They say as more people become aware of speech recognition they will be more likely they to try it. And once doctors, lawyers and managers look to implement speech recognition applications, they'll be more inclined to look for

knowledgeable people to customize their desktop to take full advantage of this speech recognition technology.

So, the next time you find yourself talking to your computer, you may actually be completing some work — rather than merely working on your frustrations over a system crash. **DAVE**

Paul Lamm (paul@short.com) is a freelance writer specializing in high-tech and communications issues.



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New Wave Of NCs Dominates Oracle Open World Conference

by Jeff Evans

NC presentation table.

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The Oracle presentation table at the Oracle Open World Conference.

At this year's annual Oracle Open World conference held in early November in San Francisco, the major excitement was caused by the unveiling of a platform of radically new network computer prototypes — powerful, cheap, multimedia devices without integral hard drives, aimed at serving a new, Internet-oriented business computing environment.

According to Oracle's Larry Ellison in a keynote speech during the conference, corporations have discovered that the operating costs of their huge numbers of networked PCs are improving a staggering financial burden on companies. According to various industry studies, the real, annual cost of running a Windows PC on a business network is in the order of US\$8,000 to US\$13,000. Only a small part of this is hardware depreciation. Large amounts are for net-

work maintenance, training, and service. A huge amount is the so-called "first factor" time spent and productivity lost by PC end-users trying vainly to solve problems with their complex PC hardware, software and connectivity technology.

The network computer, or NC, is a new computer platform designed to reduce hardware and operating costs drastically, while still maintaining most of the flexibility and intuitive user interface of a PC, according to Ellison. Oracle has published an NC specification to which dozens of hardware manufacturers are building compatible devices.

A new division of Oracle, Network Computer Inc., is spearheading the drive to co-ordinate NC development.

Although based on a variety of processor architectures including Intel, Sparc and ARM CPUs, all of the new NC devices hitting the market will run a Web browser and accept HTML (Hypertext Markup Language — the World Wide Web standard) data, as well as Java applications. What this means, in practice, is that all the costs associated with software copy-

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right compliance, viruses, file management and many other PC price/performance issues are simply lifted off the desktop and left in the hands of the network system administrators.

Ellison predicts that in a "zero maintenance" NC environment, real operating costs may drop as much as 75 per cent per NC user.

Among the network computer devices on hand at the conference was a "prehistoric" network computer prototype from Sun, dating back to preliminary studies done in 1991-92.



Sun prototype

Some of the NC vendors announced at the conference included Acorn Computer Group, Inc. of the UK, with an ARM CPU based model (at about \$400, Alan Digital, with a US\$149 NC set to ship in the first quarter of 1997; Funco Electronic Co., with an "under US\$500" NC due to ship this month, IDEA, with a currently shipping NC for US\$580, Proteon Industrial Corp.'s Xaver set-top box for US\$199, due sometime in the first half of 1997, and a wireless network NC from Uniden also set to ship in 1997.

A week before Oracle's conference, Sun Microsystems Inc. formally launched its JavaStation network computer, starting at about US\$179.

IBM Corp. rolled out its first NC model — the IBM Network Station, a few weeks prior to the Oracle conference, at a suggested list price of around \$800.

Ellison suggested that NCs embedded inside TV sets, phones, and other devices may not sit idle in US\$100 shells in a year or two, as economies of scale and the savings of not

having to have separate power supplies, cabling, and handling are realized.

According to Ellison, Java-based applications for NCs should start to flood the market by mid-1997.

There are more than 200,000 registered Java developers (compared to around 400,000 registered Windows developers). Oracle has developed software to convert the millions of existing customized Oracle applications over to Java format.

As well, the expected arrival of high-speed DSL, phone services and cable modems in 1997 may open up a very substantial home and education market for NCs, to supplement the business market.

For all that the network computer seems to offer some very persuasive potential, this is still a new approach to computing. Analysts believe there



will undoubtedly be many cases of New-Computers, incompatible, chunky legacy V.I. applications software, and lots of opportunities for Nuppley's Law to rule over planners who decide to once again leave technology's "leading edge."

Nevertheless, the network computer has arrived — and the computer business may never be the same again. **END**

Jeff Evans is Toronto Editor for Canadian Computer Wholesaler. He can be reached at jeff@t.com.ca.



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*Free scarf or rubber duck
with each notebook case!!*

by Paul Wisenberg

Product Promotion: Maybe It Is Rocket Science



Industry analysts say there's a thin line between brilliant and bokey, and resellers need to tread it carefully.

Two For The Price Of One?

Free for the price of two? A free baseball cap with every modem? A game with each CD-ROM drive? A chance to win a trip to Las Vegas. Halloween or Holidaze?

Any reseller who's been in the business for awhile has probably not only seen these promotional ideas, and many more — but you've probably even tried them. Indeed, in this competitive, yet cost-conscious industry, it's a tough balance finding the right mix of substance and style. Many technologies don't sell themselves and even those that do are often also for sale next door.

But do flashy retail promotions work? We may never know, says John Lambert, Canadian merchandising manager for the U.S.-based Quebec Computer City chain. He has been "howled away" by the band of gimicks being tried south of the border by vendors, through the superstores. They include using the full marketing force of Disney-owned characters to lure consumers inside.

Promotion Is Necessary

Retail experts like Susan O'Dell suggest the overall impact is hard to measure. Nevertheless, retailers "don't stop promotions," says O'Dell, president of the Marketing, Ont.-based Service Electronics Inc., since consumers expect to see them. She suggests that promotions require quite a bit of thought and analysis before they are introduced. "What can make a promotion 'kooky' is when it is complex and not clearly understood, she adds.

O'Dell defines a promotion as "an inducement to buy a product within a partic-

ular time frame." Promotions often include two types of advertising, one focused on vendor image and brand awareness and the other on a specific product offering that is available at a set price for "X" number of weeks. Both messages in fact have to reinforce each other, says O'Dell, or the consumer will notice "the disconnection."

Industry analyst Bob Pruchnick, president of the Markham, Ont.-based R. J. Pruchnick & Associates Ltd., suggests that the superstores in Canada suffer from smaller margins and are therefore loath to get involved in flashy promotions that are priority. Recently he encountered a lot of five-starred Halloween witches and goblins fine at a food store in Toronto while buying cable, and he was not impressed. "They were really stretching it," he says.

Comments have little impact on the typical PC buyer, according to IBM's own market research. Generally that person is mostly considering such issues as price, quality and service, says Gary Jones, IBM Canada's general manager for consumer channels.

Consumers Are Savvy

But the fact that consumers are more savvy about technology has made product promotions especially significant, says Derek Smith, Hewlett-Packard (Canada) Ltd.'s national sales manager. "People will wait on different retail stores before they'll settle on a product."

At the Vancouver-based London Drugs chain, PC product promotions generally last for about three weeks in order for the details of the sale to filter down into the consumer

market, explains CEO Wyne Powell. Because of "a luxury of economies of scale," his retailing empire can afford to mail flyers to more than two million households in B.C. and Alberta where it has outlets.

A good promotion "wraps around an envelope of comfort." Special liquidation has to be paid to local retailers, adds Powell. Vancouver's large Chinese community, he says, react better to retailers who emphasize long-term relationships with customers.

Computer City's Lambert says he has seen upwards of 25 per cent gains in business with the use of promotions in his Canadian outlets.

The Manufacturer's Role

Manufacturers have done a better job of identifying their customer base compared to retailers, according to O'Dell, adding she is surprised to find that many retailers have little data on who are buying their products.

Where does the smaller retailer fit into all of this? O'Dell urges firms to take advantage of marketing programs being offered by vendors.

What is sparking much attention among the large vendors and retailers is psychographics. For example, IBM Corp. is one vendor which has identified its target market as "progressive families," a category that cuts across traditional demographic lines and is more focused on personality and attitude than on whether the consumer is single or has 2.2 children.

IBM's 5 series of high end Pentiums, which were recently advertised in print, carry "a cool and sexy" gray charcoal look. "We are going to use more simplicity [in the industry] on the design of the product. It has

already happened with consumer electronic products," says IBM's Harris.

Prochard believes that independents have an "abysmal" record when it comes to self-promotion. This may help to explain his observation that manufacturers are gaining more "control" over the retail promotions they are funding. Up to now, he says, "the supplier has carried the cost for price cuts and then been hit by reduced margins."

Co-Op Dollars Are On The Way Out

Now, he says, co-op programs where the reseller matches funds provided by the vendor to support a sales promotion are on their way out. In situations like this, the vendor has not had full control and ended up with low margins, according to Prochard. More of a priority, he says, are vendor-directed national or North American-wide print or television campaigns which drive consumer demand for specific products or bundled systems through the entire reseller channel.

Confirming the trend away from co-op advertising is HP's Smith, who stresses a reluctance to be biased in favor of one retailer over another. "More market development is focused on a case-by-case basis."

Also, to keep the price of a bundled system down, vendors are loading free software with a pre-installed system, explains Smith. Consumers may not want to use all the applications thrown their way, he says. "There is so much software coming with the PC already."

A lot of copying of each other's promotions occurs among retailers, notes Computer City's Lambert. It is hard to conceive of any single promotion being particularly original and since it is bound to be taken up by the competition, he says that, requiring less paperwork and easy to execute, are rebates. Lambert says there is one simple reason: "30 to 40 per cent of consumers fail to mail in their coupons after a sale to get reimbursed. He adds, "They are more likely if it is a \$100 rebate than a \$10 rebate."

Also popular is free access to the Internet via a service provider upon the purchase of a bundled system. Industry analysts point out that many consumers are still timid about getting on the 'Net, and an Internet access promotion can not only be a good buying incentive, it can open up other hardware/software selling opportunities for resellers.

Avoid the marketing and promotion noise endemic to the PC industry, "we need to make sure the customer is aware of the product," says Ken Price, product manager, commercial desktops, for Compaq Canada Inc.

That has meant less PC system promotions associated with sports events, celebrity signings and free airline tickets, where the vendor is not front-and-center from a visibility perspective, say many people in the industry.

A PC is a sales necessity — an expensive item that is also a commodity, subject to cutthroat competition, says Toronto retail analyst John Winter, president of John Winter & Associates. And promotions can't just be seasonal or tied to special occasions. Promotions in this business has to be year-round because a system is generally bought out of necessity, he said.

"Promotions do not work if the customer does not need the product. It then becomes a nervous clutter." **DECE**

Paul Winkler is a journalist specializing in high technology reporting and business based in Toronto.

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Notebooks — no holds barred

With the feature-packed notebook computers hitting the market today, at a lessened price differential — there is ever-increasing opportunity to sell powerful notebooks as desktop replacement systems.

by Edward Toppenski



Toshiba's Tecra S1000 notebook includes a 10x CD-ROM.

"My notebook is my only computer," says Steve Goldman, a lawyer with Berkus, Cohen, a commercial litigation law firm in Toronto.

With notebooks selling at twice the rate of desktop computers, Goldman represents a prevailing pattern as tech-pro professionals and organizations are approaching their technology strategies. At his desk, he plugs his Compaq Contour notebook into a full-sized color monitor. He has thought about adding a regular keyboard but, because his typing fingers are numb, he says he wants to maintain the feel of one keyboard.

The notebook gives him the flexibility of taking his office with him. Since he types faster than he writes, using his notebook as

legal discovery allows him to maintain eye contact with the witnesses as he extracts them. By the end of the discovery he prints and juries his notes and instantly prepare a letter outlining follow-up actions, or as they say in the legal profession, undertakings.

On vacation, at a client's office, or at home — with a modem and Symantec's PCAnywhere software, he says his notebook gives him access to his files and has provided with the opportunity for more time away.

"Last Christmas time I had an operation, freezing, and I didn't know when it was going to come to a head," he says. "It did come to a head while I was on away on vacation. At about six o'clock in the morning I went to the lobby of the hotel I was staying at and drafted a notice of application and an affidavit. I E-mailed it to my junior in Toronto directly from my notebook. He was able to annex various documents as exhibits and file it that day. I never missed a run on the slopes."

IBM's ThinkPad 540 weighs 4.1 pounds and includes a 12.1-inch TFT screen and a full-sized keyboard.

The New Reality

While once there was a big gap between the cost of a desktop computer and a notebook, today there's only about a 20 to 25 per cent difference between a Pentium desktop and a notebook system.

Many computer vendors, (most notably Compaq Canada Inc.), have reduced their notebook prices while adding multimedia capabilities. In many cases, sound video and CD-ROM are standard from entry level through the entire notebook line.

Toshiba of Canada, Information Systems Group, the market leader with 26 per cent of notebook computers shipped in Canada through retail sales (unit sales, according to A.C. Nielsen figures) has just introduced the Satellite 200CDG with a full set of multimedia applications as its most popular priced model.

"For the next six months the focus will be on multimedia applications," says Robert Grossman, vice-president and general manager of Toshiba of Canada (50).

High capacity processors, batteries and hard drives, and larger screens, the notebooks we have implemented are at a parity with desktop computing."

He suggests this forecasts a very positive implication for resellers. For every three desktop computers corporations are replacing as they upgrade, they choose one notebook and Compaq predicts within 18 months the split will be 50/50. "We have a



"At about six o'clock in the morning I went to the lobby of the hotel I was staying at and drafted a notice of application and an affidavit. I E-mailed it to my junior in Toronto directly from my notebook. He was able to annex various documents as exhibits and file it that day. I never missed a run on the slopes."

— Steve Goldman

No CD-ROM?

Loading software onto notebooks may be tricky.

While most PCs going into the home now come equipped with CD-ROM drives, it is still quite easy to buy a notebook computer without such a feature. (Home users may, for example, decide to opt for a multimedia desktop, and a more lightly featured notebook.)

However, more and more vendors are opting to ship their software on CD-ROM; indeed some don't sell diskette versions. At Corel Corp., for example, while the CorelDraw 5.0 is an extra \$200 for the 50-diskette version (only available directly from Corel), CorelDraw 7.0, Corel Ventura 7.0 and Corel WordPerfect 7.0 have only CD-versions.

"When we ship the products on CD, we save money and the user saves money," says Jeff Bennett, team manager for technical support at Corel, in Ottawa.

For corporate CD-ROM-less notebook users, he suggests getting around the problem by loading software via the network. Or, for home users, it can be accomplished through a peer-to-peer-type network between the notebook and PC, via such a product as Traveling Software Inc.'s LapLink application.

Resellers can of course also take the opportunity to provide or sell value-added services, such as offering to install CD-ROM software onto notebooks systems for users.

Or, as more vendors opt for CD-ROM-only versions of their applications, and as prices of portable CD-ROM drives come down — there may be rationale for your notebook customers to invest in the extra hardware. **COM**

will ride coming ahead of us. It's going to allow smaller and value-added resellers to develop more multimedia applications packages to be sold to the end-user with more margin opportunity and profit."

With Pentium processors, video speakers, internal CD-ROM drives and screens as large as 12.1 inches with high resolution, Compaq is giving an indication of its direction. And modularity is slowly making a way from the high end to popular prices.

With an average weight of 3.5 to 8 pounds and a thickness of 2.5 inches in Compaq notebooks, Eric Dubois, notebook product manager for Compaq Canada, says there's more functionality in a smaller case. For 1997, he is forecasting a one-inch thin notebook, less than five pounds in weight with a large 14-inch screen and a full-sized keyboard.

The Future Is Thin

"As you decrease the size of the notebook, the only dimension you can reduce without affecting the ergonomics is the thickness," he says. "Otherwise you end up with a smaller keyboard and a smaller screen. In 1997, 12.1-inch screens will be mainstream."

Integrating a notebook into a network is always more difficult than integrating a desktop. There is good news for the VARs and integrators because organizations will have to involve their channels in the selling for maximum productivity. "The time is right now to buy a notebook," Dubois says. "The price is good. Supply is good. There are no compromises in functionality anymore and that's why we are seeing this market taking off."

What used to be available only in desktops is coming to mobile computing. As the technology gap diminishes, notebooks become a real desktop replacement possibility. With better ergonomics, bigger hard drives, and enhanced connectivity in notebooks, the two computing environments are getting product closer and closer together.

"More and more companies are seeing how their employees are more motivated to work harder when they have more flexible environments," says Eileen Nafthien, marketing manager for the ThinkPad brand at IBM Canada Ltd. "In the past, if customers were looking at mobile technologies, they would have had to pay a lot more, or cut back on technology. Now they have the choice."

In terms of look and design the Apple PowerBooks have always led the way in sleekness and elegance. With its new PowerBook 1400 series Apple is offering the opportunity to combine the appearance of

the notebook with plastic covers that can be as colorful or creative as the personality of the individual or organization wanting. Since retail winners take their notebooks everywhere, this is an opportunity to make a fashionable fashion statement.

The new PowerBooks say focusing on the advanced communications capabilities that allow access to the Internet and integration into an office network. "Especially for sales presentations, being able to reach your office and access your network is absolutely critical," says Sam Ooms, product manager for notebooks at Apple Canada Inc.

With a 64-bit architecture on its new Versa 6000 notebook, NEC says it can offer performance equal in speed and responsiveness to any desktop computer. Using latest electronic products as the model for whom they would like to take notebook computing, NEC includes devices like volume control buttons.

When people turn on the radio or television they expect instant response. Greg Myers, vice-president of sales and marketing for NEC Computer Systems Division, says his customers will soon meet the same expectations. NEC is about to introduce a handheld device weighing less than a pound and running on the Microsoft CE consumer electronics operating system.

What Myers sees down the road are modular ultralight-weight notebooks that allow the user to add slices of functionality as needed. "Any company that can get functionality and power into a package that's less than five pounds will do extremely well," Myers says. "Ultimately several companies will end up doing it, but the one who gets there first with a design the market responds to will be a big winner."

The top five notebook vendors — Toshiba, Compaq, IBM, Apple and NEC — occupy about 75 per cent of the notebook market and intend to introduce the innovations.

The second tier, including companies like Microware, Inc.-based Impulse Computer Corp., benefits when the market matures and open other avenues for integrating hardware and software.

But according to Impulse Computer Corp. president Alch Sami: "People get disappointed in everybody saying we are the price performance leader."

"What is there to believe when there is no uniqueness? We have to show them a profitable vertical solution, a nucleus around which they can do business." **EDS**
Edward Toppavento is a Toronto-based journalist specializing in high technology.



Sony enters the desktop videoconferencing market

Sony Electronics has announced that it is plunging full speed into the expanding videoconferencing market with its first desktop product, the TriuCorn 500. Up until now, Sony has concentrated on the higher-end videoconferencing systems like its US\$4,000 TriuCorn 4000.

The TriuCorn 500 includes software, a Pentium-based Interconnection (PCI) card, camera, and all the accessories to install a desktop videoconferencing system, for less than US\$2,000. It needs a single ISDN line to operate.

According to Sony, when hooked up, the TriuCorn 500 offers videoconferencing, PC phone capability, high speed Internet, and remote local area network (LAN) access. The TriuCorn 500 system also comes bundled with Datacube's FarSite software to support T-120 collaboration.

Kevin Allen, a spokesman for Sony Electronics, pointed out that with the system, a user can communicate with virtually all standard-based videoconferencing systems. Allen said the TriuCorn 500 is fully compliant with the international videoconferencing protocol, ITU-T H.320.

The TriuCorn 500 system supports high-speed Internet access via the Sony WideSDN client. The system also operates as a PC-phone allowing users to place and receive regular telephone calls from the same terminal.

The system requires just one PCI slot and has a BRI interface for videoconferencing over a standard ISDN BRI line (128Kbps). The TriuCorn 500 system also supports international ISDN videoconferencing.

The Mini-link video camera operates with a 60 degree viewing angle and variable video window that allows the user to adjust the size

of the screen image. According to Sony, the supplied software interface allows the user to adjust video quality as well as contrast, hue, brightness, and color. The system supports multiple audio devices and includes hands-free operation via the camera unit's built-in microphone and a handset for telephone-style conversations.

The TriuCorn 500 kit can be operated on either a Windows 3.1 or Windows 95-based personal computer with a PCI bus, PCI SVGA card, and 16MB of RAM. The system also requires a 80MHz Pentium chip or above, at least 15MB of hard-disk space, and a SVGA monitor.

The TriuCorn 500 desktop videoconferencing system has a suggested list price of US\$1,995. ♦

DVD rolls out in Japan

Two Japanese electronics manufacturers have given the public its first taste of DVD video players. Additional launches by other manufacturers overseas will follow in anticipation of early success in the coming Christmas sales season.

Launching DVD players on Nov. 1, were Matsushita Electric Industrial Co. and Toshiba Corp.

Two stand-alone players are being launched by Matsushita under the Panasonic brand name. The DVD-A-100 and DVD-A-200 players are capable of playing back pre-recorded DVD video disks, audio compact disks (CDs), and video-CDs.

Monthly production has been set at 30,000 units for the players which will be priced at 79,800 yen and 99,000 yen respectively. The major difference between the two models is a microphone socket, other than a video disk, that the dual on-trail and pay-as-you-view

remote control and an RF output terminal available on the more expensive A200.

Toshiba also launched its first DVD product, the SD-3000. The machine will be priced at 77,000 yen and include the ability to playback DVD video and audio CD discs.

Both manufacturers have already announced plans for other devices.

Toshiba began selling a DVD-ROM player for computer users, on Nov. 26. Matsushita is also selling a high-grade television set with a built-in DVD player.

DVD players plans have also been announced by Pioneer and Hitachi. Sony is

delaying launch until next spring because of a shortage of software titles but industry sources say the company is behind others in development of DVD hardware. ♦

Industry agrees on DVD copyright protection system

A multi-industry group charged with devising a copyright protection system for pre-recorded DVD video disks has announced it has finalized a system just days before launch of the first player. The new system, dominated by Hollywood studios, will make it impossible to copy pre-recorded disks and play them outside the U.S. before worldwide release.

The rules were drawn up by the Copyright Protection Technical Working Group's (CPTWG) subcommittee on DVD technology. The group includes representatives of the major hardware manufacturers in the DVD consortium — computer manufacturers, motion picture studios, and industry associations.

The major motion picture studios have feared that the almost perfect reproductions offered by DVD technology would make pinning of software rampant. With conventional VHS video tape, the quality falls fast with each copy generation. To get a reasonably good copy, users must acquire the original or a first generation copy of it.

DVD copies, on the other hand, are almost perfect, and a copy of the original or a copy of a hundredth-generation copy are almost identical. This could result in copies spreading far from their point of origin, with a resulting drop in the sales of the original version.

The system drawn up by the committee includes four main areas. The data on each disk will be encrypted and only DVD players will be able to unscramble it. While it is as easy to stop

copies from DVD-to-DVD because the system is all digital, stopping analog copies is more difficult. The disks will include the same MacroVision system used on commercial video tapes today to prevent duplication onto VHS tapes.

A further system called Copy Generation Management Systems is being employed to prevent duplication of the disk data onto hard DVD-RAM disks.

The fourth area of protection is one of the most controversial. Regional coding will be added to new titles that prevent them from being played outside the area in which they



ware bought. While details of this system are yet to be announced it is thought to split the globe into two regions: the U.S. and the rest of the world.

New disks bought in the U.S., often available before movies enter domestic overseas, will only play on disk players bought in the U.S. This system will not be implemented on titles that are widely available around the world so users will be able to transport movie disks around the world and find no problem playing them.

While the encryption-based system is still undergoing final evaluation by members of the subcommittee, a provisional agreement has been reached that opens the path and solution with regard to digital duplication.

The encryption system is the same as that originally proposed and was the product of a cross-industry working group. It included members from the computer industry such as IBM which managed to achieve a solution as the power needed is desirable; the video without compromising the security of the system.

As a result of the announcement, both Toshiba-EMI and Sony-Carson have said there will be slight delays in the launch of their DVD video software titles.

The sub-committee has work remaining in the protection area. It will now work towards systems that prevent copying of audio disks and videotapes onto DVD disks. *

Master consolidates its manufacturing in Singapore

Master, which already makes all of its 3.5-inch hard disk drives in Singapore, will consolidate all of its manufacturing in the republic; the company said recently while launching a new 3.0GB hard drive.

The company is moving production of 2.5-inch drives from its parent company Hyundai's facility in Korea to Singapore. The move signals its re-entry into the notebook computer market, from which it had stayed away since 1993.

Launching a new DiamondMax family of enhanced IDE hard disk drives in Singapore yesterday, Bill Hake, vice-president for worldwide sales, said volume production would begin in November. DiamondMax is to be manufactured only in Singapore, which serves as the Asia-Pacific sales headquarters for the company.

Master already has in place the infrastructure to make the 2.5-inch MiniMax drives in Singapore, meaning not much additional investment is needed, Hake said. He could not comment whether or not Hyundai

would continue to make its hard drives in Korea.

DiamondMax is the highest-capacity IDE drive in the market. Master claims to have a redesigned 3.5-inch drive for the DiamondMax series, which features capacity points of 5.1GB, 3.0GB and 2.5GB. DiamondMax drives use the same Formatted four disk head disk assembly (HDA) recently introduced in the CrystalMax line. The 3.0GB drive will cost US\$449.

Master officials say the drives feature new magnetoresistive (MR) heads instead of the thin film heads that were used in the

CrystalMax line. The seek times have been reduced to under 10 milliseconds, while the CrystalMax averages slightly less than 12 milliseconds.

Hake said the DiamondMax was targeted at the consumer desktop market, where Master is strong. "With multimedia, the Internet and the Web eating up lots of storage and with 3D-enabled processors set to fuel higher data rates this makes an ideal product," he said.

PC companies in Asia using Master hard drives include Acer, IPC and AST, Hake said. He expected PCs with 3.0GB drives to be out as early as this December. **DIG**

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12011 Midland Ave., Unit 100
Markham, Ont. L3R 4G3
Tel: (905) 473-0000 Fax: (905) 473-0001
Web Site: <http://www.compu.com>

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12011 Midland Ave., Unit 100
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12011 Midland Ave., Unit 100
Markham, Ont. L3R 4G3
Tel: (905) 473-0000 Fax: (905) 473-0001
Web Site: <http://www.compu.com>

Tel: (905) 887-2234 Fax: (905) 887-2222
info@lucanet.com

Conel Corp.

1890 Central Express Dr. Unit 112 #21
 Tel: (416) 738-0300 Fax: (416) 738-0300

Corporate Computer Systems Inc.

323 Maple Drive, Midland, Ont. L3P 5A4
 Tel: (800) 775-2222 Fax: (905) 478-0500
 Tollfree: (800) 367-5261

CPI Systems

147 Wilketton Ave. Toronto, Ont. M2H 1Y9
 Tel: (416) 752-3150 Fax: (416) 752-3236

Caroline Labs

5025 Denison St. #600, E. York, Ont.
 M3J 1K9
 Tel: (905) 738-4490 Fax: (905) 738-0541
 Custom Service: (905) 888-7022
 Technical Support: (416) 743-0200

CSI Electronics Canada Inc.

9025 Leslie St. Suite 1, Richmond Hill, Ont. L4B 3A6
 Tel: (905) 882-0200 Fax: (905) 882-1048
<http://www.csi-electronics.com>

Cybertek Enterprises Inc.

225 Concession Dr. Unit 7, Markham, Ont. L3R 9H8
 Tel: (905) 948-0880 Fax: (905) 948-0573

Cybertek Industries Inc.

#101, 328 E. Kerr Ave. North York, Ont. M2H 3M8
 Tel: (416) 321-2850 Fax: (416) 321-2525

Cypress Integrated Technologies Inc.

40 MacPherson Rd. Markham, Ont. L3R 2M6
 Tel: (905) 171-1431 Fax: (905) 171-1881
<http://www.cypress.com>

D Link Canada

360 Richmond Rd. Scarborough, Ont. M1V 1A8
 Tel: (905) 426-0450 Fax: (905) 426-0550
 Tollfree: (800) 344-7832

DeCary Canada Ltd.

28 E. 10th Ave. Suite 201, Markham, Ont. L3R 6S3
 Tel: (905) 518-3214 Fax: (905) 518-0228

Diamond Electronics Ltd.

1100 Rona Rd. Markham, Ont. L3R 4C2
 Tel: (905) 478-7290 Fax: (905) 478-7291

Dynalene Canada Inc.

35 Wilketton Dr. Unit 3, Markham, Ont. L3R 6J8
 Tel: (905) 478-1171 Fax: (905) 464-1232

Dynatec Data Distribution Inc.

401 Rona Road, Markham, Ont. L3R 3J4
 Tel: (416) 484-7801 Fax: (416) 482-8501
 Branch Office:
 Richmond, B.C. Tel: (604) 244-0513 Fax: (604) 244-0585
 Vancouver Tel: (604) 238-6702 Fax: (604) 238-1188

Dasher Technology

100 Glen Drive, Unit 11, Markham, Ont. L3R 4C3
 Tel: (905) 478-9296 Fax: (905) 478-9285

Data Accession Corporation

112 Courtney Rd. Woodbridge, Ont. L4L 5A7
 Tel: (905) 880-6599 Fax: (905) 880-6428

Data General (Canada) Company

250-7075 Midwayville Pk. Mississauga, Ont. L5N 1J8
 Tel: (905) 819-2222 Fax: (905) 819-5410
<http://www.dgc.com>

DeLuxe

35 Bessie Rd. Markham, Ont. L3R 5A2
 Tel: (905) 478-8888 Fax: (905) 478-8888
<http://www.jimmy-mall-deluxe.com>

DELTAFOOT Industries

260, 15000 Gordon Road, Richmond, B.C. V6V 2A2
 Tel: (604) 272-3540 Fax: (604) 272-8525
 Toll Free: 1-800-381-0328

DELMARK (Canada)

128 Talbot Road, Markham, Ont. L3R 3J4
 Tel: (905) 475-0140 Fax: (905) 475-0544

Deutsche Technologies Inc.

115 Redburn Dr. Scarborough, Ont. M1B 1A9
 Tel: (416) 663-1020 Fax: (416) 616-0552

Deuterium Ltd.

1285 Sandus, Montreal, Que. H4B 1R8
 Tel: (514) 321-8822 Fax: (514) 321-1458

Desai Tech Consulting Systems

148 Langstaff Rd East, Scarborough, Ont. L1B 3A6

Tel: (905) 884-0271 Fax: (905) 764-7666

Digital Electronics Corp.

3000 Dundas Road East, Unit 100, Richmond, BC V6V 1A5
 Tel: (604) 276-0500 Fax: (604) 276-0522

Digital

278 Wilketton Rd. Unit 280, North York, Ont. M2J 4Y8
 Tel: (416) 450-0150 Fax: (416) 450-7000

Digital Computer Corporation

400 Mount St. Suite 70, Scarborough, Ont. M1V 2S4
 Tel: (416) 292-4000 Fax: (416) 292-0481

Dynalene Electronics Ltd.

655 Unit 3, East Beaver Creek, Ont. N9B 5C7
 Tel: (905) 882-8000 Fax: (905) 881-1210
<http://www.dynalene.com>

Dynite Associates

32 West Beaver Creek Rd., Suite 11
 Richmond Hill, Ont. L4B 3Y3
 Tel: (905) 771-8200 Fax: (905) 771-0236

Dynastar Canada

600 The Glen Mill, Oakville, Ont. M6M 4B2
 Tel: (416) 821-1400 Fax: (416) 821-1521
<http://www.dynastar.com>

Dynatec Inc.

2100 Midwayville Blvd. E., Suite 181
 Mississauga, Ont. L4X 1V4
 Tel: (905) 524-0434 Fax: (905) 524-1719
<http://www.dynatec.com>

Digital Equipment of Canada Ltd.

670 Concession Dr. Markham, Ont. L3R 9Y7
 Tel: (905) 948-0200 Fax: (905) 948-0200

Digital Frontier

607 Bond St., Port Huron, British Columbia V3A 4Y9
 1-800-430-8880

Dynis Knowledge Research Inc.

80 Midwayville Ave. E. 18 Miss. Toronto, Ont. M2N 3M1
 Tel: (416) 256-0521 Fax: (416) 256-0540
<http://www.dynis.com>

Dynalene Computer Club

201-145-4471, 60 Bond, Richmond, B.C. V6V 1Y5
 Tel: (604) 271-1188 Fax: (604) 271-0812
 Vancouver-based: (604) 626-1585

DynexWare Inc.

2400 Glen Ave. Suite 300, Floor, Calgary, Alta. T2C 0Y1
 Tel: (403) 275-0500 Fax: (403) 275-0505
<http://www.dynexware.com>

Dynalene Micro-Link Inc.

120 Glen Pkwy. Suite 303, Markham, Ont. L3R 4C3
 Tel: (905) 470-8800 Fax: (905) 470-8800

Dynatec Technologies Inc.

1800 Glen Dr. L. Miss. Unit 302
 Montreal, Que. H3N 2A8
 Tel: (514) 242-0555 Fax: (514) 242-0504
<http://www.dynatec.com>

Dynalene Canada Inc.

77 Beaver Dr. Suite 3, Markham, Ont. L3R 6A1
 Tel: (905) 704-0770 Fax: (905) 704-0700

Dynatec Automation Systems Inc.

200 Kinsmen Pk. Bedford, NS B4B 1J8
 Tel: (902) 337-8000 Fax: (902) 337-8010
 Branch office:
 Seattle, Wash. Tel: (416) 528-2008 Fax: (416) 528-2011
 Vancouver, B.C. Tel: (604) 587-4311 Fax: (604) 587-4311

Dynalene/Deuterium Inc.

660 Glen St. S. Markham, Ont. L3R 3C9
 Tel: (905) 475-8070 Fax: (905) 475-8000

4-0-0 Business Systems

140 Wines Drive, Unit 12, Markham, Ont. L3R 9M1
 Tel: (905) 443-8438 Fax: (905) 443-8228

4-Tech Canada Limited

7775 Birchmount Road, Unit 44
 Markham, Ont. L3R 9A3
 Tel: (905) 478-8888 Fax: (905) 478-8888

Easybyte

12345 Yonge St. York Mills, Ont. M3J 3A2
 Tel: (905) 475-0273 Fax: (905) 475-0282

Eagle Industries

100-7777, 114 Ave. Markham, Ont. L3R 3J4
 Tel: (905) 944-0000 Fax: (905) 944-0000

Heavy Technology Corp.

120 Van St. West, Suite 504, Toronto, Ont. M5H 1B5

Tel: (416) 214-0000 Fax: (416) 214-0000

Eco-Systems

2780 Steeles E. Unit 3, Markham, Ont. L3R 9V2
 Tel: (905) 470-7201 Fax: (905) 470-7204
 Branch office:
 Vancouver, BC Tel: (604) 290-0200 Fax: (604) 290-0202
 Columbia, Ont. Tel: (519) 348-0327 Fax: (519) 348-0378
 Montreal, Que. Tel: (514) 343-8528 Fax: (514) 343-8548

Electronic Systems Group Ltd.

1185 Lombard St. Winnipeg, Man. R2C 1Z8
 Tel: (204) 779-0471 Fax: (204) 779-0474

Encompass Computer Systems

44100 Midwayville Blvd. Suite 10
 Mississauga, Ont. L4X 1V5
 Tel: (905) 731-1625 Fax: (905) 731-1625
<http://www.encompass.com>

ENR Data Systems Ltd.

600 West 107th, South, Ont. M1H 3M7
 Tel: (416) 321-2444 Fax: (416) 321-2444
 Branch office:
 Scarborough, B.C. Tel: (604) 273-8324 Fax: (604) 273-7504
 Calgary, Alta. Tel: (403) 240-0400 Fax: (403) 240-0470
 Bedford, N.S. Tel: (902) 806-7021 Fax: (902) 806-7127
 St. Leonard, Quebec H1A 1A0-0000 Fax: (514) 715-3518
 Winnipeg, Man. Tel: (204) 845-0000 Fax: (204) 845-0000

ENRIS Computer Corp.

180 Bond Street, Markham, Ont. L3R 9Y9
 Tel: (905) 940-2800 Fax: (905) 940-2804
 Branch Office:
 Montreal, Quebec Tel: (514) 368-8000 Fax: (514) 368-8001
 Vancouver, B.C. Tel: (604) 631-4212 Fax: (604) 631-4277

ENRIM Computer Systems

781 Main Street West, Unit 101
 Scarborough, Ont. M1V 4H1
 Tel: (416) 321-1236 Fax: (416) 321-1231

ENRIS Canada Ltd.

260 Midwayville Ave. Mississauga, Ont. L4X 1V5
 Tel: (905) 888-8855 Fax: (905) 888-4574

ER Group Inc.

210 Concession, Markham, Ont. L3R 9Y9
 Tel: (905) 821-7121 Fax: (905) 821-7814

Esnapro Products Ltd.

790 The Greenway Pk., Suite 18
 Mississauga, Ont. L4X 1Z5
 Tel: (905) 275-8000 Fax: (905) 275-8004
<http://www.esnapro.com>

ETC, Everything to Connect, Inc.

260 Midwayville Blvd. Suite 100, York Mills, Ont. M2J 1Y9
 Tel: (416) 499-1200 Fax: (416) 499-2372

Evo Corp. (Canada) Ltd.

242 Highway Ave. S. Toronto, Ont. M6P 1A8
 Tel: (416) 482-8800 Fax: (416) 482-8715

Evangelist Performance Inc.

2600 Central Blvd., Suite 11, Mississauga, Ont. L5T 2A8
 Tel: (905) 846-7000 Fax: (905) 846-7430

Evtech Computers

4048 15000, Condon Rd. Richmond, B.C. V6V 2A2
 Tel: (604) 272-0500 Fax: (604) 272-0505
 The company specializes in personal computers and
 distributed C/S networks
 Branch office:
 Calgary, Tel: (403) 254-9000 Fax: (403) 254-1058

Easybyte Corp.

3000 Steeles E. West, Suite 121
 Mississauga, Ont. L4X 1Z5
 Tel: (905) 444-0000 Fax: (905) 444-0119

Excel Business Centre

50 Concession Ave. West, North York, Ont. M2N 1A5
 Tel: (416) 324-1121 Fax: (416) 324-0249

Exide Electronics Canada Inc.

180 Concession Dr. Unit 124, Mississauga, Ont. L4X 1V5
 Tel: (905) 882-1112 Fax: (905) 882-1002
 Toll Free: 1-800-851-1112

Exonics Technologies Inc.

244, 5000 Steeles E. Unit 100, Scarborough, B.C. V3A 0A3
 Tel: (604) 442-0100 Fax: (604) 442-0070
<http://www.exonics.com>

Extech Computer Ltd.

1801-2101, Midwayville Pk. Richmond, B.C. V6V 2A2
 Tel: (604) 275-9600 Fax: (604) 275-9677

E-mail: tsam@tsamgroup.com
 Website: www.tsam.com
 Atlanta, GA Tel: (404) 391-3352 Fax: (404) 391-3318
 E-mail: tsam@tsamgroup.com

Telex Electronics (CANADA) Ltd.
 4145, 4471 Ave. 8 Road Richmond, B.C. V6V 1V8
 Tel: (604) 273-6000 Fax: (604) 273-6000

Tajima Canada Ltd.
 3538 Macmillan Blvd. and Alouette Ave. L4W 4B8
 Tel: (416) 226-5474 Fax: (416) 226-5487

Tainberg Computer Products, Inc.
 1450 Sheppard Ave. E. Unit 101 Markham, Ont. L3R 1B1
 Tel: (416) 299-1524 Fax: (708) 415-9200

TECHNIBOND Distribution
 7330 Midland Ave. Mississauga, Ont. L5T 1S4

CE Micro Electronics Inc.
 8075 Dr. St. Prosper, St. Laurent, QC H4C 1W6
 Tel: (514) 333-7322 Fax: (514) 334-7187
 Tel Fax: (505) 381-7388

Research Office
 Toronto, Ont. Tel: (416) 593-6762 Fax: (416) 593-6318
 Tel Fax: 1-800-491-6957

Microstar BC
 Tel: (604) 753-9443 Fax: (604) 700-6886
 Tel Fax: (604) 388-6222

General Database Ltd.
 4455 Steeles Ave. E. Unit 101 Scarborough, Ont. M1V 5T7
 Tel: (416) 299-8152 Fax: (416) 299-8200

Cardinal Canada Inc.
 100 Commerce Valley Drive East Thornhill, Ont. L3T 7H1
 Tel: (905) 881-2600 Fax: (905) 882-7888

Cardinal Marketing Inc.
 20 Bannockburn Blvd. G. Concord, Ont. L4K 4L4
 Tel: (905) 326-6200 Fax: (905) 326-6262
 Toronto, Ont. Tel: (416) 233-8288 Fax: (416) 233-8288

CMH Computer Accessories
 82 Steeles Ave. W. Unit C-11 Scarborough, Ont. M1V 5H4
 Tel: (416) 299-3088 Fax: (416) 299-3025

Circleline Corporation
 5797, Ontario Drive Mississauga, Ont. L4W 4R1
 Tel: (905) 276-1000 Fax: (905) 276-1001
 Research Office
 Richmond, B.C. Tel: (604) 273-1165 Fax: (604) 273-0428

Daniel Corp.
 Tel: (514) 621-1588 Fax: (514) 621-1158
 Winnipeg, MB Tel: (204) 588-6141 Fax: (204) 236-1152

GMS Database International Corp.
 #102 340 Ford Ave. Scarborough, B.C. M1V 1J8
 Tel: (416) 292-0235 Fax: (416) 292-2655
 Tel Fax: 1-800-760-4943
 Research Office
 Richmond, B.C. Tel: (604) 271-1168 Fax: (604) 271-1158
 Tel Fax: 1-800-381-3234

Golden Design Systems
 3020 Midland Ave. Scarborough, Ont. M1V 2L3
 Tel: (416) 292-1283 Fax: (416) 294-2265

Research Office
 Ontario, Ont. Tel: (416) 758-0775 Fax: (416) 758-0498
 Richmond, B.C. Tel: (604) 273-1158 Fax: (604) 273-1152

Group 1 Software
 7171 Donval Court, Suite 210 Oakville, Ont. L6H 3V7
 Tel: (905) 444-7773

Hall Mark Computer Products
 181 Soper St. North York, Ont. M2T 2L7
 Tel: (416) 593-7322 Fax: (416) 593-6444

Hewlett-Packard Corp.
 100 Alder St. Montreal, Quebec H4P 1W8
 Tel: (514) 399-8600 Fax: (514) 399-7600
 Research Office
 Richmond, B.C. Tel: (604) 273-5271 Fax: (604) 270-4070

Hewlett-Packard Canada Ltd.
 1708 Commerce View Mississauga, Ont. L4W 5G1
 Tel: (416) 226-4725 Fax: (416) 226-6128
 Tel Fax: (416) 767-3657

Hatchel (Canada) Ltd.
 8140 Compendio Rd. Scarborough, Ont. M1S 2L4
 Tel: (416) 292-1700 Fax: (416) 292-6518

Hyack Canadian Enterprises Ltd.
 240-1718 Bagnall Road, Richmond, B.C. V6X 1T2
 Tel: (604) 276-0759 Fax: (604) 276-0600

IBM Canada Ltd.
 2800 Steeles Ave. E. Markham, Ont. L3R 9Z7

Tel: (905) 476-4700

Inquiry Technology Inc.

2800 East Beaver Creek, Vancouver, B.C. V6H 2V4
 Tel: (604) 267-1800 Fax: (604) 263-9322
 Tel Fax: 1-800-952-8272

Inquire Computer Corporation
 7705 Airport Road Mississauga, Ont. L5N 1M4
 Tel: (905) 566-3600 Fax: (905) 566-3600
 Tel Fax: (905) 622-1171

Inquire Micro Inc. (Canada)

2000 Bayview Ave. Richmond, B.C. V6V 2Z5
 Tel: (604) 742-0644 Fax: (604) 742-0700

Research Office
 Montreal, Que. Tel: (514) 334-0295 Fax: (514) 334-2774
 Ottawa, Ont. Tel: (613) 283-0286 Fax: (613) 283-3397
 Calgary, AB Tel: (403) 260-0021 Fax: (403) 260-1118
 Richmond, B.C. Tel: (604) 276-0267 Fax: (604) 276-0268

InterWorld Electronics & Computer Industries Ltd.

1841 Bladen St. North Vancouver, B.C.
 Tel: (604) 264-4771 Fax: (604) 264-6337
 E-mail: interworld@interworld.ca

IPC Personal Computers (80 Microcomputers)

268 Steeles Ave. W. Markham, Ont. L3R 1Y5
 Tel: (416) 476-0603 Fax: (416) 476-7688

Juris Systems Inc.

80 Steeles Ave. W. Markham, Ont. L3R 1Y5
 Tel: (416) 477-0283 Fax: (416) 477-0681

Kee Information Systems Inc.

1000 Steeles Ave. W. Unit 41 Markham, Ont. L3R 9V2
 Tel: (416) 273-7270 Fax: (416) 273-6222

Research Office

Mississauga, Ont. Tel: (905) 850-0500 Fax: (905) 850-0501
 Vancouver, B.C. Tel: (604) 621-9999 Fax: (604) 622-0500

KMI Electronics Inc.

1175 Victoria Park, Unit 3 Markham, Ont. L3R 9M4
 Tel: (905) 948-8633 Fax: (905) 948-8633

Kodak Canada Inc.

2000 Highway 404, Miss. Toronto, Ont. M9W 1V3
 Tel: (416) 296-6222 Fax: (416) 296-6222

Lancel 2000

280 Steeles Ave. W. Suite #10 Markham, Ont. L3R 9V2
 Tel: (416) 477-8500 Fax: (416) 477-8226

Landmark Computer Exhibitions, Inc.

44 Miller Avenue, Holland Landing, Ont. L9M 1C7
 Tel: (905) 255-7001 Fax: (905) 255-3215

Largo Marketing

1203171 Alton Road, Richmond, B.C. V6V 2M5
 Tel: (604) 273-1176 Fax: (604) 273-1176

LOI Advanced Technology Ltd.

141003 12888 Campus Road
 Richmond, B.C. V6V 2H1
 Tel: (604) 273-8520 Fax: (604) 273-8520

LOH Resources Inc.

49 13571 Greenwood Road, Richmond, B.C.
 Tel: (604) 276-0000 Fax: (604) 276-0000

Lorimar Canada Inc.

180 Royal Crest Ct. Markham, Ont. L3R 9A2
 Tel: (905) 477-2211 Fax: (905) 477-3923
 Tel Fax: 1-800-833-9652

LG Electronics Canada Inc.

7381 Pacific Drive, Mississauga, Ont. L5T 3K4
 Tel: (905) 272-0850 Fax: (905) 272-2219

LGW Home International Co. Ltd.

2401 Main St. Vancouver, B.C. V6K 3A3
 Tel: (604) 278-8882 Fax: (604) 683-1284
 1-800-693-0294

Lingo Computers Canada Inc.

1000 St. Joseph St. Victoria, B.C. V8V 1V3
 Tel: (604) 273-4991 Fax: (604) 273-1088

MacInte International Ltd.

#102 12888 Campus Road, Richmond, B.C. V6V 2M5
 Tel: (604) 273-0338 Fax: (604) 273-0338

Macron Canada Inc.

300 Alder Road, Unit 1 Markham, Ont. L3R 9V2
 Tel: (905) 476-0228 Fax: (905) 476-1774
 E-Mail: macron@macron.com

Marathon Computer Corp.

201 Main Road, Markham, Ont. L3R 9V2
 Tel: (905) 475-1100 Fax: (905) 475-8008

Research Office

Richmond, B.C. Tel: (604) 270-7474 Fax: (604) 270-7474

Matrix Graphics Inc.

1025 St. Regis Drive, Dorval, Que. H9P 2T4
 Tel: (514) 648-2600 Fax: (514) 648-2652

Mathefide Electric of Canada (Parscan)

1715 Archer Dr. Mississauga, Ont. L4W 2T3
 Tel: (905) 276-2322 Fax: (905) 276-2417

Research Office

Calgary, AB Tel: (403) 246-3713 Fax: (403) 246-4882
 Richmond, B.C. Tel: (604) 273-0271 Fax: (604) 273-1152
 Montreal, Que. Tel: (514) 622-2550 Fax: (514) 622-1586

Max B Canada

711 Balfour St. Cananda, Ont. L4T 1P2
 Tel: (905) 850-0107 Fax: (905) 850-0107
 E-mail: bmax@maxb.com

Memorial Corp.
 Tel: (514) 443-0271 Fax: (514) 441-3986
 Vancouver, B.C. Tel: (604) 439-7786 Fax: (604) 439-5217

McKinnon Music Distributing

4170 Steeles Ave. East, Richmond, B.C. V6V 2H9
 Tel: (604) 276-8171 Fax: (604) 276-8171

Memory House Inc.

1001 14011 Canada Road, Richmond, B.C. V6A 3G8
 Tel: (604) 273-1152 Fax: (604) 273-1152
 E-mail: info@memory.com

Master Systems Corp.

5527 Main Street, Vancouver, B.C. V6R 2G2
 Tel: (604) 271-4000

Master Corp.

288 Pioneer Drive, Oakville, Ont. M6W 2T8
 Tel: (416) 246-1212 Fax: (416) 246-2800

Research Office

St. Laurent, B.C. Tel: (514) 719-3440 Fax: (514) 719-1758
 Richmond, B.C. Tel: (604) 273-3446 Fax: (604) 273-1713

Micropro

2040 Greenwood Ave. Burlington, Ont. L7M 2T4
 Tel: (905) 272-8841 Fax: (905) 300-8120

Mirvill Technology Inc.

1008 Selkirk Road, Richmond, B.C. V6M 2T7
 Tel: (604) 276-8486 Fax: (604) 276-1361

Mintronics Office Automation

118-1200 Jervis Road, Richmond, B.C.
 Tel: (604) 276-4241 Fax: (604) 276-0248

MIT Computer Supplies Co. Ltd.

42 Steeles Ave. E. Unit 101 Markham, Ont. L3R 9M5
 Tel: (905) 943-8000 Fax: (905) 946-4746
 Tel Fax: 1-800-798-0225

Microfide Electric Sales Canada Inc.

Information on Technology Group
 4250 140th Ave. Richmond, Ont. L3R 9V2
 Tel: (905) 476-7299

Motion Works Corp.

3620 Westside St. Suite 120 Vancouver, B.C. V6B 2T4
 Tel: (604) 267-8876 Fax: (604) 267-8876

Metrolink Information Systems Group

4250 Midland Ave. Mississauga, Ont. L4W 5G1
 Tel: (905) 276-1200 Fax: (905) 276-1201

MultiMedia Works Inc.

40 Warden Ave. Suite 105
 North York, Ont. M2C 1A8
 Tel: (416) 494-2704 Fax: (416) 494-0889
 Tel Fax: 1-800-381-3884

MultiMedia Solutions Inc.

Lower 1401 2nd St. W. Oakville, Ontario L6H 6K7
 Tel: (905) 276-8700 Fax: (905) 276-7767

National Computer Products

10000 117th Ave. Richmond, B.C. V6V 2V2
 Tel: (604) 476-1000 Fax: (604) 476-1000

Toll Free Sales 1-800-381-0889

Branch offices:

Mississauga, Ont. Tel. (905) 894-0129 Fax. (905) 895-4098
 Vancouver, B.C. Tel. (604) 263-0400 Fax. (604) 263-4440
 Calgary, AB Tel. (403) 267-0170 Fax. (403) 267-0908

NBS Business Forms Ltd.

230 Henderson St. Mississauga, Ont. L4R 4V8

Tel. (905) 898-0200 Fax. (905) 898-0219

NBC Technologies Canada

2275 Kennedy Road, Richmond Hill, Ont. L4T 3L1

Tel. (905) 709-0800 Fax. (905) 709-0800

Northern

1450 Lakeshore Road, Unit 1, Oshawa, Ont. M6L 3C7

Tel. (709) 588-8080 Fax. (709) 588-8080

NVO Position Inc.

270 Battersby Rd. E. Unit 8 Mississauga, Ont. L4T 1A9

Tel. (905) 892-8679 Fax. (905) 892-8779

Search offices:

Mississauga Tel. (905) 892-8600 Fax. (905) 892-8600

Montreal Tel. (514) 4 280 8800 Fax. (514) 4 280 8800

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By Grönne Bennett

The Golden Age of Tech Support

*There's nothing that will bond your clients to you like saving their bacon with little or no delay with the good news that the new printer driver (etc.) that will solve their problem is at <http://www.whatever.com> and that you're downloading it right now.**

It's probably safe to say there aren't too many computer resellers out there who haven't benefited from the surge of interest in the Internet over the last few years.

Indeed, the 'Net is widely attributed as the major force that drove the home computer boom during this period (a plethora of fly-by-night, unscrupulous titles and plummeting prices on CPUs, hard drives and RAM didn't hurt, either). Even those consumers that don't yet own a machine probably have a basic idea of the wealth of resources "out there" and are aware that the 'Net can provide a wide array of business, education or entertainment benefits.

But what about Internet shopping? Most analysts agree that the average consumer is not ready — not likely to be anytime soon — to trust his or her credit card onto the uncertainty of the 'Net.

So, in commerce on the 'Net (a non-issue?) I don't think so. Although Ros and Josephine Consumer may not be ready to buy hi-tech products via the Internet, there is a distinct and powerful New Consumer trend toward researching purchases in this way. The basic principle works for technical troubleshooting, as well: search Usenet for the product model and see what others are saying about it, and looking for solutions to common problems.

Indeed, a growing number of people are surfing the net to find out the caveats and pitfalls of their intended purchase before dropping their bucks on the table.

Leverage the Internet

Here's how you can participate in this strong and potentially profitable trend.

1. Get your technicians to use a search engine to search Usenet (and/or the Web) for answers for your clients — preferably while they are on another phone line. There's nothing that will bond your clients to you like saving their bacon with little or no delay with the good news that the new printer driver (etc.) that will solve their problem is at <http://www.whatever.com> and that you're downloading it right now.

2. Harness your company's on-line presence with the kind of information that helps

your clients make informed purchases. What is the difference between an IX and a VX motherboard? Why should they pay extra for SDRAM, and so on? If you can show them this info on your company's Web site (or even a local hard drive copy), you not only demonstrate that you have the answers and the technical expertise to fulfill their needs, but you are, in effect, training them to become more self-sufficient in solving their own problems. After all, every hour your technicians spend in after-sale-support hurts the bottom line.

3. A decent search engine can put relevant information at your fingertips; too Recommended configurations, technical specs and ballpark prices can be called up while you're talking to the customer on another line.

4. Another key piece of your on-line presence is the Email angle. Encouraging your customers to interact with you via E-mail has several potential benefits: most notably, the dialogue carries its own tracking and response mechanisms. The information is easily carried to or from databases, fax-backs, and other data types. Having the ability to file information directly from your PC only adds to the advantage.

Understand the Intranet

There are many other ways to leverage the Internet experience.

Chances are, you, like many dealers, find that your best customers have a central cable network infrastructure in place, too. These organizations have users who just like you have gone through the growing pains of DOS-based networks and are now experiencing the advantages of more mature Windows clients and administration tools.

As well, if we are to believe the statistics, it is clear that many businesses are experimenting with in-house "intranet" servers and related technologies. The fact that a growing number of companies are starting to discuss why they need routers, hubs, proxy servers and other happenings of modern networks is a good reason for your staff to be looking into these areas.

Even if the majority of your customers aren't far into "the deep end" yet, it is clearly

to your benefit to take a leadership role and get acquainted with the tools and techniques that are required to put up an Intranet server. Fortunately, this is remarkably easy these days. With tools Microsoft's freely distributed Personal Web Server or the tools in FrontPage or NT's Internet Information Server, the tools are almost trivially easy to set up and maintain, at least at a basic level.

Naturally, there are plenty of solutions that don't involve those Windows-based tools, too. If your business focus is Macintosh of databases, or any one of a thousand other niches, there are products you probably already know about that will both prove and complement your expertise.

Is it a waste of time if you are not planning to sell Internet systems or services? Not at all. Your customers want to upgrade and what new upgrade doesn't include a few Internet-related features? If the customer's got a question, who are they going to call?

Everyone's doing it

As with the 'Net has probably become more commercial than it was in the worst nightmares of the Internet old-timers.

There are very few companies who don't fancy seeing their products or services listed somewhere on the Web — and it is far to say that relatively few of those that do post their pages on the Web do so in a way that is truly effective. Nevertheless, businesses want to be there and with all that free software to help them build their own pages, they probably have a home page standing already.

Now that dual standards for 56Kbps modems are in the news, ADSL is just around the corner and ISDN is reaching the home at affordable prices, it will be interesting to see what will happen to the modem market. Drop me an E-mail and tell me what you think! ☺☺☺

Grönne Bennett holds the position of managing editor at *The Computer Paper* and is a former computer reseller. Based in Minnesota, he can be reached at gronne@tcg.ca



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LEADING THE CHARGE

COMTEX SUPER SERVER CCW's AWARD OF TECHNICAL EXCELLENCE

Here's what *Canadian Computer Wholesaler Magazine* had to say about the Comtex Super Server

If you're looking for server or power this dual processing Pentium Pro 200 is a definite attention grabber. With 128MB of RAM, a fast Seagate SCSI HD and a \$2,800 video card with 16MB on board, you've got yourself the makings of a real performer. The zippy video card certainly helped this system score high on our benchmark tests.

Comtex is well known for submitting solid machines into our Lab tests, and this time around was no exception. (The Win95/DNE system is fast, complete, and affordable. The system is com-



posed of quality components such as a Diamond Stealth video card, a Western Digital hard drive, an 8x CD-ROM from Timberline, and NT v4.0, all for a suggested retail price of \$3,200.)



OCT '95
Diamond Award
Comtex Super Server

Builder

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Service/Works regains Greg Smith

Richmond, B.C.'s Service/Works Distribution Inc. has named Greg Smith director of sales — western region.

According to the company, Smith has more than a decade of experience in computer hardware distributions.

Originally an account representative with Service/Works, from 1986 to 1993, he returned to the company after four years in an account manager with Globaltek.

His chief responsibilities at Service/Works will be to continue to build partnerships with the reseller community and to oversee the company's marketing efforts. ♦

Kahn cuts link to Borland

(NB) — Philippe Kahn has severed his last official tie to Borland International with his resignation from the company's board of directors. Before he stepped down from his chief executive officer position in 1999, he spent 12 years taking Borland from a garage operation to a multi-national software company.

During that time, he experienced the highs and lows typical of high-tech companies. He was the darling of the media at times and, at others, the guy responsible for heavy Borland losses. He introduced developer tools, a contact manager, a word processor, a spreadsheet product, database products, and others. He built record revenues, at times in triple digit growth, for the company and he suffered through huge losses.

After he stepped down as the head of the company, he remained a part of Borland by holding a seat on the board. As a good-by present, he received the rights to Sidekick, a personal information manager, and DevInfo, a Windows interface and applications manager/developer.

With Sidekick as a centerpiece, Kahn established a new start-up software company called Starfish Software in 1995. His latest efforts focus on products, including Sidekick, which incorporate Internet and Java features.

Today's announcement came from Starfish, which in a short release, stated, "Philippe Kahn today resigned as a member of the board of directors of Borland International Inc. Kahn has lessened his involvement with Borland since he started aggressively pursuing Java software

development with Starfish Software, a company he co-founded in 1994 to provide Internet-related solutions for information management, collaboration, and productivity."

A representative of Starfish said, "Philippe does not want to talk about the past and what happened at Borland." ♦

Former Microsoft Canada GM resigns from corporation

(NB) — In Microsoft's second major reorganization in the last few months, the company created two new worldwide product groups and established the new position of chief technology officer. At the same time, Microsoft announced the resignation of its highest ranking woman executive, Patty Stoneweller, senior vice-president of the Interactive Media Division.

Under the realignment, two new product groups are created: Platforms and Applications which will be headed by group vice-president, Paul Minto, and Interactive Media which will be headed by group vice-president, Pete Higgins. Group vice-president, Nathan Myhrvold, was also announced as taking the new position of chief technology officer. Minto had headed the Platforms Group, but now has responsibility due to include productivity software. Higgins and Myhrvold had co-managed Microsoft's Applications and Content Group.

The resignation of Patty Stoneweller came as a surprise, especially as it was announced along with this realignment. She was just appointed head of the Interactive Media Division on this year, and with the realignment would have been under Higgins. Stoneweller said she has chosen to leave after eight years at Microsoft to pursue personal interests and a new career in a management consultant. She plans to remain with Microsoft through the end of the year.

Stoneweller joined Microsoft in 1988 and began as senior manager of Microsoft Press and later served as general manager for Microsoft Canada. She was named vice-president of product support services (1988). In 1993, she became head of the Consumer Division of Microsoft, which became the Interactive Media Division in 1996.

"Patty has built the top consumer software business in the world," said Microsoft CEO Bill Gates. "She began talking about moving on and focusing on personal interests and new professional opportunities a year ago but agreed to stay on and step up her involvement because of the unique challenges we faced with interactive media and to ensure a great transition. She made incredible contributions as a variety of roles and we will miss her." **END**

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Collected Numbers

NT is growing force on Canada's Intel servers

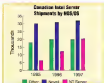
NT Server sales are taking off in the Intel server world, according to a recent study called "Unix and NT Server Markets in Canada" by Evans Research Corp., of Willowdale, Ont.

According to the study, corporations are abandoning on NT Server because it appears to be "a good long-term buying decision."

It appears customers aren't buying NT Server as Intel for client/server, but rather to support file-and-print applications.

Support file-and-print applications.

Says the report: "NT Server is thus making tremendous inroads in Novell's market. The network integrators that we have talked to in the last quarter have all described similar scenarios. Last year, Novell outsold NT Server 10 to one. This year, the ratio is expected to decline to two or three to one. Several predicted that next year NT Server sales would rival Novell sales."



Source: Evans Research Corp.

Voice Your Opinion! Reader Poll

The concept of the network computer is hot — at least in the minds of readers these days, in company after company such as IBM, Sun, Oracle, launch that voice of the NC, and as even Microsoft and Intel get in on the game with their NetPC counter-proposal.

Meanwhile, many computer manufacturers are also turning their attention to the home market and looking for opportunity in the Internet "appliance" scenario — which would allow users to browse the World Wide Web and access Internet services via a low-cost terminal device.

Our questions to you:

Do you think the network computer will be a significant technology for business customers?

☐ Yes ☐ No

Do you anticipate demand from your home customers for an Internet appliance?

☐ Yes ☐ No

Send your response by fax

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North American software sales are up over last year's figures, says the SPA

According to figures released by the Software Publishers Association (SPA), based in Washington, D.C., sales of personal computer application software in North America reached US\$4.51 billion — an overall 7.6 per cent increase over the first half of 1995. Sales for the second quarter of 1996 were US\$2.35 billion, a 5.7 per cent increase of the second quarter of 1995.

The SPA says desktop publishing and utilities software sales exhibited the highest growth rates during the first half of 1996, recording US\$198.4 million in sales, an increase of 60.2 per cent over last year's figure of US\$98.8 million. Utilities sales in the first half of 1996

(US\$517.1 million) were up 59.4 per cent.

Also making strong showings in the first half of the year were: databases (up 32.5 per cent), graphics (up 48 per cent), and languages and tools (up 37.9 per cent).

Sales of combined 16-bit and 32-bit Windows applications increased 14 per cent in Q2, over the same period last year. But DOS applications were down 51 per cent over the quarter a year ago, and Macintosh applications were down 21 per cent. (However, Macintosh home creativity and databases showed increases of 76.9 per cent and 80.4 per cent respectively over Q2 1995.)

North American PC Software Sales (First Half 1996)

SUS	Q2	Windows 32-bit	Windows 16-bit	Macintosh	Total ***
Entertainment	\$170.0	\$32.0	\$74.3	\$22.1	\$298.4
Home Creativity	**	\$13.6	\$161.9	\$15.1	\$190.6
Home Education	\$35.6	\$33.3	\$219.1	\$66.0	\$353.9
Finance	\$25.6	\$1.9	\$199.3	\$23.6	\$250.7
Word Processors	\$2.1	\$91.8	\$308.3	\$21.7	\$423.9
Spreadsheets	\$1.7	\$61.6	\$269.1	\$16.9	\$349.3
Databases	\$3.3	\$52.1	\$114.6	\$24.5	\$194.5
Integrated	**	\$10.7	\$32.8	\$13.2	\$56.7
Utilities	\$29.7	\$113.8	\$83.2	\$94.1	\$319.8
Presentation Graphics	**	\$44.3	\$183.7	\$12.3	\$240.3
Drawing & Painting	**	\$5.4	\$95.7	\$84.9	\$186.0
Desktop Publishing	**	\$27.0	\$92.8	\$48.5	\$168.3
Other Graphics	\$9.9	\$73.7	\$71.7	\$33.7	\$189.0
Project Management	\$2.5	\$14.3	\$58.5	\$3.5	\$78.8
PIVs	\$2.1	\$4.4	\$132.0	\$21.4	\$160.0
Languages & Tools	\$3.2	\$59.5	\$159.7	\$3.3	\$225.7
Other Productivity	\$66.1	\$165.0	\$428.0	\$129.1	\$828.2
Total*	\$352.6	\$695.5	\$2,614.8	\$603.9	\$4,271.8

* Includes sales to retail and direct. ** Includes a category with sales of less than \$10,000 in total for the quarter. *** Includes other software not reported.

Source: Software Publishers Association

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